DOCUMENT RESUME

ED 300 956 EC 211 251

AUTHOR	Chadsey-Rusch, Janis; And Others
TITLE	Social Ecology of the Workplace.
INSTITUTION	Illinois Univ., Champaign. Secondary Transition Intervention Effectiveness Inst.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE	88
CONTRACT	300-85-0160
NOTE	132p.
PUB TYPE	Collected Works - General (020) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Adults; *Employer Attitudes; *Friendship; *Interaction Process Analysis; *Interpersonal Relationship; *Mental Retardation; Observation; Quality of Working Life; Work Environment
IDENTIFIERS	*Social Ecology; *Supported Work Programs

ABSTRACT

The collection contains six papers of studies which investigated the social ecology of the workplace and associated implications for friendship formations between adults with and without mental retardation. The papers' authors, Janis Chadsey-Rusch, Frank Rusch, Patricia Gonzalez, Jeffrey Tines, Kathleen Minch, and Carolyn Hughes, observed competitive and supported employment settings and analyzed social interactions. Papers have the following titles: "Social Ecology of the Workplace: Employers' Perceptions versus Direct Observation"; "Social Ecology of the Workplace: A Study of Interactions Among Employees With and Without Mental Retardation"; "Identification of Co-Worker Involvement in Supported Employment: A Review and Analysis"; "Evaluation of the Role of Job Site Supervisors in the Supervision of Employees with Severe Disabilities"; and "Social Ecology of the Workplace: Coding Categories and Rules." Among overall findings were that workers with mental retardation were just as likely to be involved in social task-related interactions with co-workers. They were not as likely to be involved in social nontask-related interactions. (DB)

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Social Ecology of the Workplace

Janis Chadsey-Rusch

EC 211 251

TRANSITION
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AT ILLINOIS

The following principles guide our research related to the education and employment of youth and adults with specialized education, training, employment, and adjustment needs.

- Individuals have a basic right to be educated and to work in the environment that least restricts their right to learn and interact with other students and persons who are not handicapped.
- Individuals with varied abilities, social backgrounds, aptitudes, and learning styles must have equal access and opportunity to engage in education and work, and life-long learning.
- Educational experiences must be planned, delivered, and evaluated based upon the unique abilities, social backgrounds, and learning styles of the individual.
- Agencies, organizations, and individuals from a broad array of disciplines and professional fields must effectively and systematically coordinate their efforts to meet individual education and employment needs.
- Individuals grow and mature throughout their lives requiring varying levels and types of educational and employment support.
- The capability of an individual to obtain and hold meaningful and productive employment is important to the individual's quality of life.
- Parents, advocates, and friends form a vitally important social network that is an instrumental aspect of education, transition to employment, and continuing employment.

The Secondary Transition Intervention Effectiveness Institute is funded through the Office of Special Education Programs, Office of Special Education and Rehabilitative Services, U.S. Department of Education (contract number 300-85-0160).

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SOCIAL ECOLOGY OF THE WORKPLACE

Janis Chadsey-Rusch

The Secondary Transition
Intervention Effectiveness Institute
College of Education
University of Illinois at Urbana-Champaign

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Acknowledgments

This publication was supported in part by contract number OE 300-85-0160 awarded to the University of Illinois by the U.S. Department of Education, Office of Special Education and Rehabilitative Services. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. The opinions expressed herein, therefore, do not necessarily reflect the position or policy of the Department of Education or the Office of Special Education and Rehabilitative Services.

The authors are grateful to the personnel and clients of Developmental Services Center and the personnel in the employment settings for their willingness to participate in these studies. Special thanks are also extended to John Johnson for his assistance in data analysis, to Frank R. Rusch and Lizanne DeStefano for their insight and support, and to Kathy Minch for her assistance in data collection.

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Introduction

The Workplace: Implications for Friendship Formations Between Adults With and Without Mental Retardation

Janis Chadsey-Rusch

Many work settings are also social environments. Workers interact with their supervisors and co-workers about job-related matters, such as the job tasks that need to be done and the best way to accomplish these tasks. In addition, workers interact frequently about nonrelated job tasks, such as the weather, current events, and leisure pursuits. Because the workplace can often be a social environment, it has the potential to promote the formations of friendships. Frequently, friendships develop on the job. For example, Verbrugge (1979) reported that adults often name work colleagues among their closest friends. Even adolescents report that many of their friendships were established at work settings (Zetlin & Murtaugh, 1988).

Friendships are likely to develop in the workplace for three reasons: (a) workers are in close proximity to one another, (b) they share common interests and experiences, and (c) they have the opportunity to provide help and support to others (Verbrugge, 1979). Close proximity is important for developing friendships because it provides the opportunity for interactions. As a relationship develops, it isn't always necessary for two people to be in constant close physical proximity (e.g., such as sharing an apartment or working side by side), but at some point in the relationship there has to be close physical proximity in order for a relationship to develop. Initially, there has to be an opportunity for interactions to occur and for friendships to form.

At work, co-workers have opportunities for interactions and the possibility to form friendships. Opportunities to interact may occur during lunch and breaks, or at company-sponsored events such as parties or bowling or baseball leagues. In addition, the physical layout of a setting may promote interactions if people work in close proximity to one another and few physical barriers exist.

Besides proximity, another important element that contributes toward friendship formations occurs when two people have similar interests, backgrounds, attitudes, and personality (Festinger, 1950; Izard, 1960; Veitch & Griffitt, 1973). Pogrebin (1987) suggests that we prefer people who are similar to us and that our friends typically live, work, and recreate where we do. At work, co-workers definitely have one thing in common--their jobs. Thus, co-workers are involved in similar types of experiences for a good portion of their day. It is likely that social interactions center frequently around job-related topics and events that occur in the workplace.

Two prominent theories in friendship formation suggest that relationships are regarded more positively if the individuals involved in the relationship perceive it to be more rewarding than costly (Altman & Taylor, 1973; Levinger & Snoek, 1972). Although difficult to define, the rewards of friendship have included emotional support and help, trust, acceptance, companionship, ego enhancement, and stimulation (Ginsburg, Gottman, & Parker, 1986). It is very possible that these kinds of rewards can be provided by co-workers. Many of us have probably been involved in an unpleasant situation at work that was improved because of the help and support provided by a co-worker. In addition, co-workers may provide support about nonwork-related matters. The workplace provides the opportunity for interactions of this type to occur and these interactions can contribute to the formation of friendships.

Both people with mental retardation and people without mental retardation will cite the importance and satisfaction of having friends (e.g., Birenbaum & Seiffer, 1976; Pogrebin, 1987). Besides the fact that friendships offer a variety of rewards (e.g., support), there is also research to suggest that there is a positive relationship between people who are close to one another and their emotional and physical well-being (e.g., Berman & Syme, 1979). In addition, research indicates that people who have friends are better able to cope with stress (Nuckolis, Cassell, & Kaplan, 1972). Clearly, friendships are important for a number of reasons.

Unfortunately, there are many people who do not have friends and are lonely (Peplau & Perlman, 1982). There is also recent research that indicates that children and youth with mental retardation who are in mainstreamed school settings are lonely (Luftig, 1988) and have fewer friends than their nonhandicapped peers (Zetlin & Murtaugh, 1988). As we strive for community integration, we must assess friendship networks and develop strategies to facilitate friendships if these networks are lacking.

Where to Begin

The obvious first step toward facilitating friendship formations is to provide the opportunity for close physical proximity between individuals. The supported employment movement has significantly increased the opportunity for close physical proximity between persons with and without handicaps. Because there are more adults with handicaps working in integrated employment settings, we do know that we have made strides in creating the opportunities for friendships to develop. Where these opportunities exist, however, it would be helpful to know the kind of relationships that individuals with mental retardation have with their co-workers, the kind of interactions in which engage, and whether or not they are lonely. Little information exists to answer any of these questions.

Rusch (1988) has been exploring the issue of co-worker involvement by looking at the types of support provided by co-workers to target employees (or persons with handicaps). Essentially, Rusch (1988) has identified a number of relationships that exist in supported employment settings: training, associating, befriending, advocating, and evaluating. In the training relationship, the co-worker provides on-the-job training to the target employee. An associating relationship indicates that a co-worker merely interacts with the target employee at some time, whereas befriending means that the co-worker interacts with the target employee outside the work setting. When co-workers advocate, they protect, optimize, and support the target employee's employment status. If co-workers assume an evaluating relationship, they assess and evaluate a target employee's social and work performance.

In a survey of several hundred co-workers, Rusch (1988) found that the most common relationship assumed by the co-workers was associating (30%), closely followed by evaluating (24%), training (22%), advocating (15%), and befriending (8%). This information is very helpful in suggesting that interactions do occur between workers with and without handicaps, but that the types of interactions or relationships may not be the kind that indicate friendships are developing.

Chadsey-Rusch, Gonzalez, & Tines (1987) have also been involved in research that has a bearing on friendship patterns in the workplace. Chadsey-Rusch et al. observed directly the social interactions of workers with and without mental retardation who performed the same job. The results of these observations indicated that workers were nearly as likely to interact about nontask or nonwork topics as they were to interact about task-related or work topics. In addition, nonwork-related interactions were the most frequent during arrival to work and during lunch and break periods.

Chadsey-Rusch et al. also found that workers with mental retardation were just as likely to be involved in job-related interactions as nonhandicapped workers, but were less likely to be involved in nonwork-related interactions; this was particularly true for workers with mental retardation during lunch and break.

Thus, even though workers with mental retardation may be in close proximity to their co-workers, they may not be involved in the type of interactions that might contribute to friendship formations with nonhandicapped co-workers. As Chadsey-Rusch et al. (1987) have indicated, workers with mental retardation were involved in interactions, but these interactions were primarily about work-related topics and frequently involved directions, questions, and information about work. Far fewer interactions were about nonwork topics or other personal interests such as sports, current events, and leisure pursuits. As Rusch (1988) found, it may be that co-workers "associate" with workers with mental retardation, but far fewer actually "befriend" these workers.

Clearly, because of the paucity of research, few conclusions can be drawn about whether or not friendships are developing between persons with and without handicaps in employment settings. If friendships are not developing, we do not know whether or not these workers are lonely. It is possible that some workers with mental retardation may have developed friends outside the workplace. However, if this is not the case, and if individuals are lonely and would like more friends, it would seem to be important to develop strategies to facilitate friendships.

As we continue to make strides by enabling persons with handicaps to work in integrated employment settings, we must not be content with mere physical integration. We must determine if workers have friends and support and if they are lonely. The work setting is one place where friendships can be facilitated, and we should develop strategies to do so. Clearly, there is a great deal of work to do in this area; this work is important because having friends enhances the quality of our lives.

NOTES

[1] This study was supported in part by the Office of Special Education and Rehabilitative Services, United States Department of Education, pursuant to contract number OEG 300-85-016C. However, the opinions herein do not necessarily reflect the position or policy of the Office of Special Education, United States Department of Education.

This study was originally presented at a conference at the Young Adult Institute, New York City, in April 1988.

References

Altman, I., & Taylor, D. A. (1973). Social penetration: The development of interpersonal relationships. New York: Holt.

Berman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. American Journal of Epidemiology, 109, 186-204.

Birenbaum, A., & Seiffer, S. (1976). Resettling retarded adults in a managed community. New York: Praeger.

Chadsey-Rusch, J., Gonzalez, P., & Tines, J. (1987). Social ecology of the workplace: A study of interactions among employees with and without mental retardation. Champaign: University of Illinois, Transition Institute at Illinois.

Festinger, L. (1950). Laboratory experiments: The role of group belongingness. In J. G. Miller (Ed.), Experiments in social process (pp. 31-46). New York: McGraw-Hill.

Ginsberg, D., Gottman, J., & Parker, J. (1986). The importance of friendship. In J. Gottman & J. Parker (Eds.). Conversation of friends. New York: Cambridge University Press.

Izard, C. E. (1960). Personality, similarity, and friendship. Journal of Abnormal and Social Psychology, 61, 47-51.

Levinger, G., & Snoek, J. D. (1972). Attraction in relationships: A new look at interpersonal attraction. Cambridge, MA: General Learning Press.

Luftig, R. L. (1988). Assessment of perceived school loneliness and isolation of mentally retarded and nonretarded students. American Journal of Mental Retardation, 92, 472-475.

Nuckolis, C. G., Cassell, J., & Kaplan, B. H. (1972). Psychosocial assets, life crises and the prognosis of pregnancy. American Journal of Epidemiology, 95, 431-441.

Peplau, L. A., & Perlman, D. (Eds.). (1982). Loneliness: A sourcebook of current theory, research, and therapy. New York: Wiley.

Pogrebin, L. C. (1987). Among friends. New York: McGraw-Hill.

Rusch, F. R. (1988). Co-worker involvement. In Rusch, F., & DeStefano, L. (Eds.). Transition Institute Annual Report. Champaign: University of Illinois, Transition Institute at Illinois.

Veitch, R., & Griffitt, W. (1973). Attitude commitment: Its impact on the similarity-attraction relationship. Bulletin of the Psychonomic Society, 1, 295-297.

Verbrugge, L. M. (1979). Multiplexity in adult friendships. Social Forces, 57(4), 1286-1304.

Zetlin, A. G., & Murtaugh, M. (1988). Friendship patterns of mildly learning handicapped and nonhandicapped high school students. American Journal of Mental Retardation, 92, 447-454.

Social Ecology of the Workplace: Employers' Perceptions versus Direct Observation

Janis Chadsey-Rusch
and
Patricia Gonzalez

As more individuals with disabilities enter the workplace, it is becoming increasingly important that valued social behaviors be identified. Detailed descriptions of social behaviors are important for several reasons. First, the results of recent research have suggested that many individuals with disabilities have lost their jobs because they lack appropriate social behaviors (e.g., Brickey, Campbell, & Browning, 1985; Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986). Second, the unemployment status of workers with disabilities ranges from 50% to 80% (U.S. Commission on Civil Rights, 1983); it is possible that training work-related social behaviors may help to decrease these unemployment rates. Finally, the acquisition and maintenance of appropriate social behaviors may help to facilitate friendships and social-support networks so that occupational stress is reduced (House, 1981) and the quality of life is enhanced (Chadsey-Rusch & Rusch, 1988).

To date, little research has been conducted that identifies the social behaviors needed for competitive employment, and the few existing studies have used survey methods as the primary research procedures. Typically, employers have been sent questionnaires and asked to rate the importance and frequency of specific social behaviors. For example, Rusch, Schutz, and Agran (1982) sent questionnaires to 120 potential employers in the food service, light industrial, and janitorial/maid service occupations in six Illinois communities to solicit information about their expectations for behaviors at entry into employment. Employers specified 70 behaviors necessary for entry into competitive employment; 16 social behaviors were agreed upon by 90% of the employers as being important. Two social behaviors (verbally reciting full name on request and following one instruction at a time) were mentioned by every employer as critical for competitive employment.

Salzberg, Agran, and Lignugaris/Kraft (1986) assessed the importance and frequency of social behaviors across food service and janitorial/maid occupations in Utah. The results of their study indicated that social behaviors related to worker productivity (e.g., asking supervisors for assistance, clarifying instructions) were rated higher in frequency and importance than general personal social behaviors (e.g., using social amenities, listening without interrupting).

In another study conducted by Salzberg and his colleagues (McConaughy, Stowitschek, Salzberg, & Peatross, 1985), employers were asked to rate social behaviors for all entry-level workers; no differentiation was made between workers with and without handicapping conditions. Employers rated behaviors according to importance, frequency of occurrence, and satisfaction with present employees, and they rated behaviors of most concern in hiring, retaining, and promoting employees. The results of this study showed that several behaviors were rated high in importance and also high in frequency (e.g., using social amenities, following instructions, offering to help someone else). The behaviors of most concern, with the highest combined ratings of importance and satisfaction, were: following instructions, getting necessary information before performing a task, providing job-related information to others, and offering to help someone else.

Although these studies are useful in providing information about employers' expectations of potential employees, there is no assurance that this information is accurate; that is, there have been few direct observations of social skills in employment sites to confirm these reports. In one of the few studies to date, Lignugaris/Kraft, Rule, Salzberg, and Stowitschek (1986) directly observed the social interactions of handicapped and nonhandicapped employees in two large nonprofit organizations that specialized in refurbishing household goods. After each observation, the participants' social interactions were described by means of a social behavior checklist. The results of this study provided preliminary information about the content and patterns of social interactions, but the checklist method precluded information about the frequency and context of the interactions. In addition, the work setting where the data were collected may not have been representative of other competitive work situations. Thus, direct comparisons between the results of the Lignugaris/Kraft et al. (1986) study and the survey results reported above (e.g., Salzberg et al., 1986), may not be valid.

The purpose of the present study was to observe directly the social interaction patterns of nonhandicapped employees across seven different competitive employment sites using narrative recording procedures. The data were analyzed to determine if there was a correspondence between employers' expectations for social behaviors and those social behaviors observed directly in competitive employment settings. The results are discussed in relation to the curriculum implications they have for transitioning youth and adults with handicaps into similar employment settings.

Method

Subjects

A total of eight nonhandicapped workers participated in the study. All subjects were selected by their employers because they worked at the same time as a worker with mental retardation and performed a similar job (Chadsey-Rusch, Gonzalez, & Tines, 1987). Seven workers were male, one was female, and their average age was 25 years (SD = 3.2). All individuals had completed high school and had been employed in their present jobs for an average of 3.4 years (SD = 2.3).

Setting

Observations were conducted in seven competitive employment sites, six in food service occupations and one in a light industrial setting. Five of the six food service sites were university dormitory settings, and one was a pizzeria. The light industrial site was a printing service.

All of the subjects employed at the food service sites were kitchen laborers. The individuals at the print shop performed a variety of jobs, including collating, binding, and running machinery.

Data Collection

All data were collected with the use of narrative recording procedures. This methodology was chosen for two reasons: (a) to ensure that frequently occurring and important social behaviors were not missed because of an established a priori behavioral code, and (b) to ensure that the social context in which the behaviors occurred was recorded as well as the behaviors.

Most workers were observed five times during four different time periods or conditions: arrival at work, a break or lunch period, and two work periods (Work 1 and Work 2). The work periods were randomly selected throughout the day: however, Work 1 preceded Work 2 in all instances. Thus, there were approximately 20 observations of each subject which covered an approximate two-week time span. In two settings, however, it was not possible to gather 20 observations. In the pizzeria, the workers never took breaks, and in one of the dormitory settings, workers immediately went on break when they arrived at work, so that the arrival and break periods were combined.

The length of the observation periods for arrival and the two work periods was 20 minutes. During break and lunch observations, the workers were observed for the duration of these periods, which varied in length from 15 to 30 minutes. Thus, each subject was observed for approximately 5.5 hours.

Observers and Observer Training

Four individuals served as observers in the study. Two of the observers were doctoral students in vocational and technical education, had taught individuals with mental retardation, and were experienced with applied behavioral analysis methods. The third observer was an undergraduate student in special education who was enrolled in a moderate and severe handicaps teacher-training program. The fourth observer was the senior author.

All observers participated in training sessions before they conducted any in vivo observations. During the training sessions, observers viewed videotapes from two office settings and practiced recording the social interactions that occurred in the tapes.

All observers recorded behaviors for 5 minutes and then read their narratives aloud for comparison with those of the other observers. Feedback was given regarding the frequency, context, and social interactions described; the objectivity of the observations; and the ability to record the primary sequence of steps of an action throughout the observations. Once data collection began, observers met weekly to discuss data collection procedures and any problems in the data collection sites.

Observers were trained to record an uninterrupted stream of behavior with as much detail as possible about the social interaction behaviors of a designated subject. Narratives were used to describe what a subject did and said as well as information about the setting and social context. Other individuals were recorded only in relationship to the person selected for observation. Observers essentially made a chronological record of all the main steps in any action. A sample of a narrative recording is included below.

> The participant asks a male co-worker a work question. The co-worker responds. The co-worker and the participant continue to talk about work. The participant says he is hungry and the co-worker says he was thinking the same thing. The participant is reading a work order and comments on it to the co-worker. The co-worker asks if it has been numbered and then says, "Go and do it, I guess." The co-worker and participant discuss what to do about the order. The participant says, "I hope they have enough boxes." The co-worker says "Hell, they carried enough over."

Analysis

All handwritten narrations were typed. In order to analyze the narrations, codes were developed and assigned to the behaviors described within the narrations. All social interactions were coded as being either nontask related or task related. In addition, interactions were also coded for the purpose they served, for example, to direct, to question, or to request assistance. The behaviors included in the codes were based upon patterns that were emerging from the data and from behaviors that employers had cited as being important in competitive employment settings (e.g., Salzberg et al., 1986). Table 1 provides definitions of the behavior codes. (The code appears in its entirety elsewhere in this volume.)

Reliability Procedures

Two types of reliability were computed--intercoder reliability and interobserver reliability. Intercoder reliability was used to measure the agreement between two persons when they assigned codes to the same narrative. Interobserver reliability was used to measure the agreement between two observers when they observed the same subject at the same time.

Intercoder reliability. Intercoder reliability was calculated on 20% of the total number of observations. Random selection was used to obtain one observation from each time condition (i.e., Arrival, Break/Lunch, Work 1, and Work 2) for each subject. Each reliability checker (i.e., the senior author and a doctoral student in vocational and technical education) coded the same narrative independently of one another.

Reliability was calculated using the point-by-point agreement method (Kazdin, 1982), where agreements are divided by agreements plus disagreements and multiplied by 100. An agreement was scored when both coders placed the same social interaction code or purpose code over the same sentence in the narrative. The average intercoder reliability score across all codes was 84% and ranged from 78% to 91% (Chadsey-Rusch et al., 1987).

Interobserver reliability. Measuring the interobserver reliability of narrative records is difficult because observers differ in their choice of words, emphasis, and amount of detail provided (Schoggen, 1978). In many studies of this type, agreement is only reported between analysts or coders. In the present study, however, interobserver reliability was calculated by two methods. In both methods, reliability checks were

Table 1

Dependent Variables

Social Interactions that are Nontask Related--Any verbal exchange that is unrelated to tasks required on the job, objects associated with the job, or job responsibilities (e.g., being to work on time, required dress), or any joke, response, comment, question, or gesture that elicits laughter from one or more people.

Social Interactions that are Task Related--Any verbal or motoric interaction that is related to the job, including tasks required on the job, tasks directed by another to complete or assist in as part of the services rendered by the employer, objects associated with the job, job responsibilities (i.e., being to work on time, required dress), feelings about the job, job gossip, or work-related social events.

Purpose Codes

1. To Direct--A verbal statement or question, motoric gesture, or both asking or demanding a person to engage or not engage in a verbal or physical behavior (e.g., /"Do this paper gluing first."//"Why don't you come over to my house?"//"Can you hand me a spatula?"/).
2. To Question--A verbal statement in the interrogative form used to obtain information or clarification. This should also include implied interrogatives (e.g., "So you're assigned to mop the floor."). Other examples include: /"Did you go out last night?"/"Have you cut the order yet?"/
3. To Criticize--A derogatory, corrective, or punishing statement or question about family (e.g., "Your sister sounds like a bitch."), friends (e.g., "Your friend gets into a lot of trouble?"), possessions

(e.g., "Your car is in such bad shape that I would buy a new one."), appearance (e.g., "You need a hair cut."), and behavior (e.g., "That is not the way I told you to slice those vegetables" or "The floor is too wet").

4. To Praise--A complimentary statement regarding family (e.g., "I wish my mom was more like your mom."), friends (e.g., "You are lucky to have such supportive friends."), possessions (e.g., "I like your new purse."), appearance (e.g., "Great tan."), and behavior (e.g., "You are working so fast I'm having trouble keeping up with you," or "OK." or "fine" or "good job.").
5. Requests for Assistance--Asking for help in the completion of a work-related task (e.g., "Help me unload this order, O.K.?), or social-related task (e.g., "Will you help me get cokes for everybody?").
6. To Offer Assistance--A verbal statement used to extend help in order to complete a work-related task (e.g., "Let me help you put cheese on the pizzas."), or social-related situation ("Let me help buy the cake."), or a self-initiated, spontaneous, nonverbal behavior described in the narrative as "helping," for example, P goes over to help slice the cheese.
7. To be Polite--Use Social Amenities--To use words commonly associated with politeness or manners (e.g., thank you, please, excuse me, pardon me, gesundheit).
8. To Greet/To Depart--To acknowledge the presence of another by saying such things as "Hi," "Good morning," "How ya doing?," "What's happening?" or to use words commonly associated when departing (e.g., "Bye," "See you tomorrow.").

9. To Tease or Joke--(a) Any question, comment, response, joke, gesture (e.g., imitation, pointing) or laughter that pokes fun, (b) any question, comment, response, joke, gesture that is described in the narrative as "a joke" or "humorous," or (c) any behavior that elicits laughter from one or more people.

10. To Converse/Comment/Share Information--Any verbal statement in past, future, or present tense regarding a task-related or social-related topic.

11. To Get Attention--A word, phrase, gesture, or sound used to attract the attention of another, for example, "Hey," "Hey, Robin," "Tim," "You there," a wave, or a whistle.

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selected randomly across 10% of the total observation sessions. Two trained observers watched the same subject at the same time and completed their narrative recordings independently.

With the first calculation method, a group of 40 volunteers consisting of graduate and undergraduate students in education were asked to rate the similarity of pairs of narrative recordings on a Likert-type scale ranging from one to five (Chadsey-Rusch & Gonzalez, 1987). All raters were naive to the purpose of their task. The overall similarity rating assigned to the observations was 3.21 with a standard deviation of 1.1, which indicates that the raters judged the narratives to be moderately similar.

A second index of interobserver reliability was obtained once the codes were assigned to the narratives. Pearson product moment correlations were computed between the total frequencies of each code on all narrative records written simultaneously. The average interobserver correlation coefficient across all the codes was 0.75.

Results

Both quantitative and qualitative results are presented. The quantitative results include descriptive statistics regarding the percentage of occurrence of the dependent variables. The qualitative results describe the context and content of the interactions.

Quantitative Results

The data were analyzed to determine the percentage of occurrence for each purpose code. Figure 1 shows that the purpose of most of the interactions across all subjects was to share information (22%), tease and joke with others (22%), ask questions (18%), direct (12%), greet (7%), and offer to assist (4%). Interactions used to criticize, praise, request

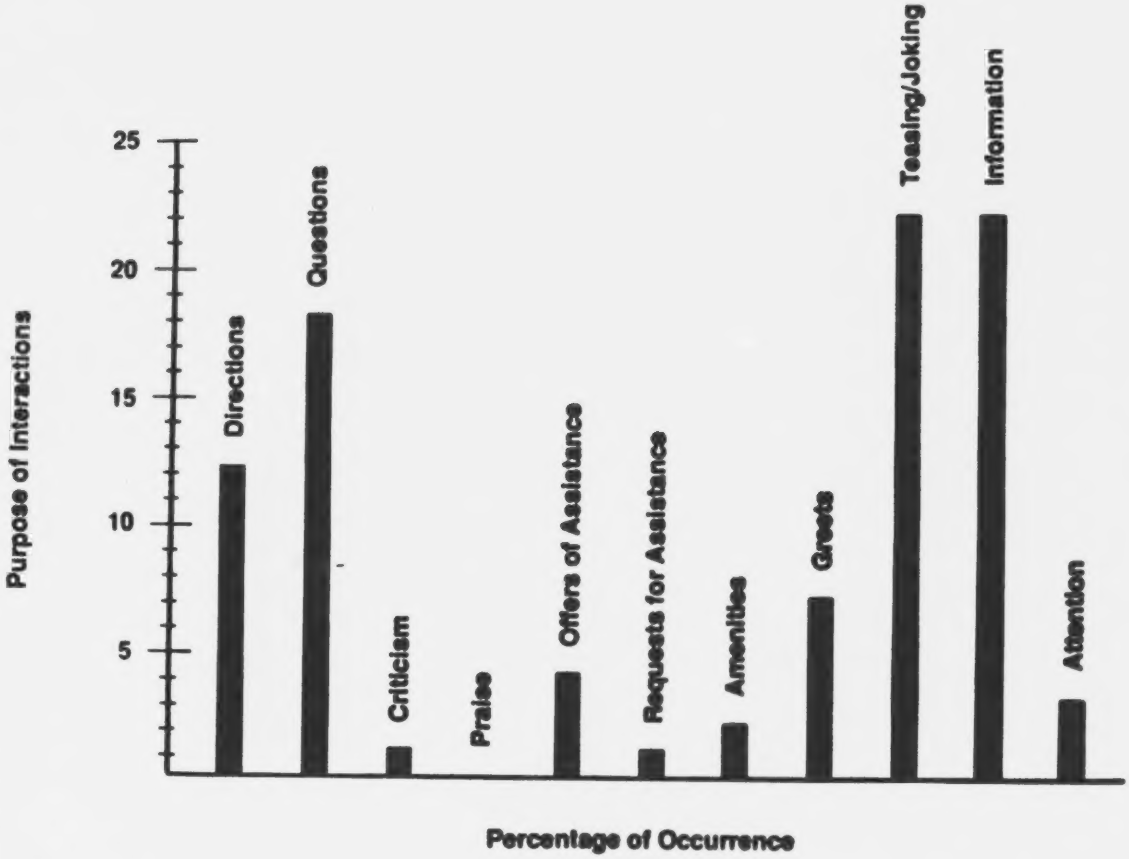

Figure 1. Purpose of interactions by percentage of occurrence.

assistance, be polite, and get another's attention all occurred less than 3% of the time.

Table 2 breaks down the percentage of occurrence of the purpose of interactions by condition. During Arrival, the purpose of most interactions was to share information (26%), ask questions (27%), tease and joke (14%), greet (13%), and direct (13%). Teasing and joking constituted the purpose of most interactions during break (42%), followed by sharing information (36%) and asking questions (13%). During Work 1 and Work 2, questions were asked most frequently (25% and 30%), followed by sharing information in Work 1 (22%) and teasing and joking in Work 2 (28%). More directions were given during Work 1 (17%) than in Work 2 (8%).

Overall, the workers in this study engaged in slightly more social task-related interactions (51%) than nontask-related interactions (49%). The majority of these task-related interactions (67%) occurred during the two work periods and primarily included questioning, directing, and sharing information. During Arrival and Break, however, the majority of the interactions in which the subjects engaged were social nontask-related (64%). During Arrival, the interactions were mostly greetings, teasing and joking, and questioning. During Break, the majority of the interactions were teasing and joking and sharing information.

Of the 896 interactions that occurred across all the settings, 21% involved the supervisors. More interactions (73%) were initiated by the supervisors than by the subjects, and 70% of these interactions were work related. Interestingly, when the subjects initiated interactions with the supervisors, 70% were also work related. However, when subjects initiated interactions with their co-workers, only 52% of the interactions involved

Table 2

Percentage of Occurrence of Interaction By Condition

Purpose	Condition			
	Arrival	Break	Work 1	Work 2
Directions	13	2	17	8
Questions	27	13	25	30
Criticism	--	--	3	--
Praise	--	--	1	--
Offers Assistance	2	1	6	6
Requests Assistance	1	1	1	2
Amenities	0	1	3	3
Greets	13	4	4	4
Teasing/Joking	14	42	17	28
Information	26	36	22	13
Attention	4	0	2	6

work tasks. Supervisors' initiations were primarily directions (64%) and questions (36%), whereas subjects' initiations to supervisors were primarily questions (60%) and sharing information (40%).

Qualitative Results

The use of narrative recording procedures enabled us to describe the content and context of the interactions. For example, the primary purpose of many interactions across all seven settings was to share information, particularly information that was nonwork related. A variety of topics, such as sports, the weather, health-related issues, and current events were discussed. The following excerpts portray some of these examples.

> The participant (the subject in the study P) comes in with food and chocolate milk and then goes to get a sweet roll. P sits down at the table next to a co-worker (C). P talks about his health and listens to the other C explain her health and then laughs in response. P says he thought he had the flu and then talks for awhile about treating the flu.
>
> P tells C a story he heard on the radio about a man whose car got hit by a rock from a field that was being plowed by a farmer, and now the man was going to sue the farmer. C says, "Boy, there are all kinds of people in this world." P says, "Sounds like he is out for a free ride."

Teasing and joking was also used frequently across all four conditions primarily by the subjects in the study and their co-workers. Similar to sharing information, a variety of topics were teased and joked about.

> P is sitting eating his lunch. P yells across to a female C, "Wake up C." The female C yells back, "It's too early." P says, "It must have been a hard night last night." The female C says, "I can't remember." P says, "Too many rum and cokes?" The female C says, "No, beer."
>
> P walks toward the kitchen with three other co-workers. One C begins to laugh as P climbs into a garbage bag and punches holes in the arms and puts it on like a dress. P says, "C is playing me so I am playing her." C has a food service jacket on. The P and C joke and all other employees laugh.

Questions were often asked and used during both task-related and nontask-related interactions. During task-related interactions, questions were frequently used to confirm a work-related action.

> P walks toward a stack of empty cartons and asks a C if he can throw the empty cartons away. The C agrees, and P begins throwing them away.

Questions were also used to acquire work information.

> A C returns with a garbage cart. P asks him if there is any hot water over at the other end. The C says he doesn't know but will check it out.

Questions that were nontask related were also used to acquire information and were frequently used by workers to initiate conversations.

> C asked P how "the Cardinals did yesterday." P answers then asks C "who's pitching for the Cards?" C answers, and P asks him to repeat.

Directions were given primarily during Arrival and Work 1 and Work 2 and were task related in nature. During Arrival, directions were generally used to describe the work for the day and frequently involved multiple steps.

> In the workroom, S gives directions to P and two other Cs regarding their jobs for the morning. Directions were given on cutting, collating, and ticking.

In some instances, directions were subtle in nature.

> As P walks by, the supervisor says, "You might have to use a cart to carry the pizzas down." P says "Ok."

Discussion

In this study, the social interactions of competitively employed nonhandicapped workers were directly observed using narrative recording procedures. All of the employees worked at the same time as a worker with mental retardation and performed similar jobs. Consequently, the types of interactions displayed across these jobs are likely to be representative of the types of interactions that many workers with handicaps will encounter in similar jobs.

The results of this investigation demonstrated that the majority of interactions were used to share information, tease and joke, ask questions, and give directions. In addition, the number of work-related interactions was only 29% greater than nonwork related interactions. Interestingly, the pattern of interactions observed in the present study was similar to the pattern of interactions involving successfully placed workers with handicaps in the same job sites reported by Chadsey-Rusch et al. (1987), in which workers with handicaps were also involved in interactions used primarily to ask questions, share information, and give directions.

The results of the present study support and extend the results reported by Rusch et al. (1982) and Salzberg and his colleagues (McConaughy et al., 1985; Salzberg et al., 1986). These survey results and the present study are compared in relationship to social task-related and nontask-related interactions.

Social Interactions: Task Related

When employers have been surveyed, they have consistently mentioned that following directions is a frequently occurring behavior that is crucial to employment success. In the present investigation, 12% of all interactions involved following directions and constituted the purpose of most supervisors' interactions. Directions were particularly prominent during arrival periods and often involved multiple steps constituting the work that needed to be performed for the day. If youth and adults with handicaps are to be transitioned successfully into competitive employment settings, it is likely that they are going to have to be able to follow directions. Because nearly all directions are verbal, workers with severe language and cognitive impairments could encounter problems. Either school and training programs will have to emphasize following directions, or supervisors will have to be persuaded to modify their interactions by giving one direction at a time, using clear and simple language, and perhaps combining the verbal direction with a model (or picture). Persuading supervisors to modify their instructions may not be a very difficult task. In a survey of 29 food service administrators, Menchetti, Rusch, and Lamson

(1981) reported that the majority of administrators indicated that they would allow modeling and physical assistance as training techniques and would sometimes allow picture coding of job schedules and instructions.

Sharing information was observed to be one of the most frequently occurring types of interactions. In Salzberg et al. (1986), employers rated this behavior as frequent, and in McConoughy et al. (1985), providing job-related information to others was rated highly for concern and importance. Apparently individuals with handicaps will find numerous occasions when they will either have to provide or respond to job-related information. As shown in the present study, they may have to indicate that something isn't working properly, that a co-worker is sick, that jobs were not completed the night before, and that they are leaving their work stations to get necessary supplies.

The participants in this study asked many work-related questions, which confirms the findings of Salzberg et al. (1986). In particular, questions were used to confirm work-related procedures and to acquire work-related information. It is likely that employees with handicaps will need to be able to ask these types of questions to avoid making mistakes on the job.

It is of particular interest that certain other types of interactions that Salzberg and his colleagues mentioned as being very important to employers, occurred rarely in the present study; offering assistance, requesting assistance, accepting criticism, and using social amenities together constituted only 8% of all interactions. This finding does not imply that these behaviors should be omitted from a training curriculum. However, because these types of interactions occur rarely, it is likely that even if they were taught, many individuals with handicaps may not initiate or respond to these interactions appropriately because of the lack of opportunity to practice these behaviors in the natural environment.

Finally, one other type of interaction deserves discussion because it probably occurs frequently in training and teaching situations, even though it occurred infrequently within the work settings observed. Direct verbal praise happened only twice throughout all 896 observations. Thus, when individuals with handicaps join the work force, they may have to work without verbal praise and feedback, and teachers may want to use praise less frequently with older students and to encourage productivity by substituting other natural aspects of the workplace as reinforcers, such as money, interactions with others, and the satisfaction of a completed task.

Social Interactions: Nontask Related

McConoughy et al. (1985) and Salzberg et al. (1986) have consistently argued that social task-related interactions are more important on the job than nontask-related interactions. In the present study, direct observation of supervisors' interactions with participants confirm these results. However, social nontask-related interactions, especially with co-workers, comprised nearly half of all of the interactions that took place. Although future research is needed to determine whether social nontask-related interactions are crucial to employment success, it is very probable that these types of interactions contribute to social support and friendship networks on the job.

Several categories of nontask-related interactions were observed frequently across settings. In particular, workers were likely to tease and joke with their co-workers. This same finding was also reported by Lignugaris/Kraft et al. (1986). Although this type of interaction would be expected to occur during breaks, it also occurred with high frequency during work periods. It is important to note, however, that the playful verbal banter, which often constituted the teasing and joking, was frequently done while employees were working. This finding suggests that it may be important to teach individuals with handicaps to respond appropriately to teasing and joking by others. First, they could be taught to recognize when this type of interaction occurs, and second, they could be taught appropriate responses to the interactions such as smiling or commenting that someone is funny. When workers were involved in teasing and joking interactions, they were frequently smiling or laughing and appeared to be having a good time. Consequently, it is likely that an individual with a handicap would also find this type of interaction pleasurable and might find that it contributed toward friendship formations.

In addition to teasing and joking, sharing information that was nontask related was frequently observed among the participants in this study. Generally, these types of interactions were used to initiate conversations. The content of the narrative recordings suggests that a variety of topics were discussed by workers, but in particular, information about the weather, sports, and cars was often shared. Youth with handicaps could be taught to initiate or respond to conversations that concerned these topics using a similar strategy employed by Gaylord-Ross, Haring, Breen, and Pitts-Conway (1984). In their study, youth with autism were taught to initiate interactions about commonly used leisure objects (e.g., a radio) with nonhandicapped peers via a social-skills training script. Being able to share information about topics in which others are interested may help to form friendships on the job.

The final category that may also contribute toward social support on the job and that was observed to occur frequently in the present study, was greetings. Surprisingly, greetings occurred throughout all four conditions, but naturally happened most often during Arrival. Being able to say hello, wave, or even smile in response to someone else's greeting is not a complex behavior, and many individuals with handicaps could learn this skill (e.g., Haring, Roger, Lee, Breen, & Gaylord-Ross, 1984).

Summary

Several social skill areas in which training may enhance employment are suggested by the results of this research. Although the frequencies of the particular behaviors suggest important social-skill categories, the qualitative results suggest the social context in which these behaviors occurred. This type of detailed information could likely be used to create vignettes for instruction and practice, similar to the procedures used by Bates (1980); that is, qualitative information could be used to provide an analysis of the social situation, including the people involved; the topic of the interaction; and relevant verbal, nonverbal, and sequences of behavior.

Although this information may be important in the workplace, it is probable that some individuals with severe cognitive limitations will not possess these social skills. The results of this study should in no way suggest that these individuals are not ready for competitive employment. It is likely that jobs can be found or redesigned so that they are not dependent upon some of the more sophisticated or complex social skills that nonhandicapped employees are likely to use, such as teasing and joking.

Finally, although the information derived from this research is important as a first step in describing, through direct observation, the types of social interactions that occur in entry-level employment positions, there are limitations to generalizations that can be made. First, the sample of subjects was small and primarily male. It is possible that a larger sample consisting of an equal number of male and female subjects would yield different results. Second, only two occupations were represented in this study, food service and printing; direct observation of a wider sample of occupations might result in different social interaction patterns. However, these occupations are representative of the types of jobs available to many employees with handicaps. In addition, the results of the present study have been compared to those of other studies (e.g., Salzberg et al., 1986). It is possible that different survey results might have been obtained if the present study had included a survey of employers. Future research efforts should combine both survey and direct observation techniques within the same study so that correlations between the two measures can be calculated.

Another potential limitation of this study is the problem of observer reactivity. It is possible that the subjects in the study were influenced by observer presence and did not display their "normal" social interactions. However, when subjects were questioned at the end of the study about observer presence, six of the eight subjects indicated that they did not act differently when they were being observed. Although half of the subjects were glad when the observations were completed, the others were noncommittal, and one subject wished that the study would continue because he believed other employees in the site worked harder when observations took place. Thus, observer presence may have influenced job production, but not necessarily social interactions. Interestingly, in a review of the literature, Foster and Cone (1986) pointed out that in 19 published studies, only 34 of the behaviors observed appeared to have been affected by observer presence. Clearly, more research is needed to document the precise effects of observer reactivity.

Limitations notwithstanding, the information from this research has confirmed many of the perceptions of employers about the types of social behaviors that occur frequently and are important on the job. In addition, this research suggests several other types of interactions that might not be of concern to employers, but that might contribute toward employees' social support and friendships. Finally, the results of this study suggest several social skill areas in which training may enhance the employment of persons with handicaps.

References

Bates, P. (1980). The effectiveness of interpersonal skills training on the social skill acquisition of moderately and mildly retarded adults. Journal of Applied Behavior Analysis, 13, 237-248.

Brickey, M. P., Campbell, K. M., & Browning, L. J. (1985). A five-year follow-up of sheltered workshop employees placed in competitive jobs. Mental Retardation, 23, 67-73.

Chadsey-Rusch, J., & Gonzalez, P. (1987). Interobserver reliability technique for narrative recordings. Unpublished manuscript.

Chadsey-Rusch, J., Gonzalez, P., & Tines, J. (1987). The social ecology of the workplace: A study of interactions among employees with and without mental retardation. (This volume).

Chadsey-Rusch, J., & Rusch, F. (1988). The ecology of the workplace. In R. Gaylord-Ross (Ed.), Vocational education for persons with special needs (pp. 234-256). Mountain View, CA: Mayfield.

Foster, S. L., & Cone, J. D. (1986). Design and use of direct observation procedures. In A. R. Ciminero, K. S. Calhoun, & H. E. Adams (Eds.), Handbook of behavioral assessment (2nd ed.) (pp. 253-324). New York: John Wiley.

Gaylord-Ross, R. J., Haring, T. G., Breen, C., & Pitts-Conway, V. (1984). The training and generalization of social interaction skills with autistic youth. Journal of Applied Behavior Analysis, 17, 229-247.

Greenspan, S., & Shoultz, B. (1981). Why mentally retarded adults lose their jobs. Social competence as a factor in work adjustment. Applied Research in Mental Retardation, 2(1), 23-38.

Hanley-Maxwell, C., Rusch, F. R., Chadsey-Rusch, J., & Renzaglia, A. (1986). Factors contributing to job terminations. The Journal of the Association for Persons with Severe Handicaps, 11, 45-52.

Haring, T. G., Roger, B., Lee, M., Breen, C. G., & Gaylord-Ross, R. J. (1984). Facilitating pragmatic aspects of social language use with moderately and severely handicapped children. In R. Gaylord-Ross, T. Haring, C. Breen, M. Lee, V. Pitts-Conway, & B. Roger (Eds.). The social development of handicapped students. San Francisco: San Francisco State University.

House, J. S. (1981). Work stress and social support. Reading, MA: Addison-Wesley.

Kazdin, A. E. (1982). Single-case research designs: Methods for clinical and applied settings. New York: Oxford University Press.

Lignugaris/Kraft, B., Rule, S., Salzberg, C. L., & Stowitschek, J. J. (1986). Social interpersonal skills of handicapped and nonhandicapped adults at work. Journal of Employment Counseling, 20-30.

McConaughy, E. K., Stowitschek, J. J., Salzberg, C. L., & Peatross, D. K. (1985). Multiple ratings of employees' social behaviors by work supervisors. Unpublished manuscript, Department of Special Education, Utah State University, Logan.

Menchetti, B. M., Rusch, F. R., & Lamson, D. S. (1981). Social validation of behavioral training techniques: Assessing the normalizing qualities of competitive employment training procedures. Journal of the Association for Persons with Severe Handicaps, 6(2), 6-16.

Rusch, F. R., Schutz, R. P., & Agran, M. (1982). Validating entry-level survival skills for service occupations: Implications for curriculum development. Journal of the Association for Persons with Severe Handicaps, 7, 32-41.

Salzberg, C. L., Agran, M., & Lignugaris/Kraft, B. (1986). Behaviors that contribute to entry-level employment: A profile of five jobs. Applied Research in Mental Retardation, 7, 299-314.

Schoggen, P. (1978). Ecological psychology and mental retardation. In G. P. Sackett (Ed.), Observing behavior Vol. I: Theory and applications in mental retardation (pp. 33-62). Baltimore: University Park Press.

U.S. Commission on Civil Rights. (1983). Accommodating the spectrum of disabilities. Washington, D.C.: Author.

Social Ecology of the Workplace: A Study of Interactions Among Employees With and Without Mental Retardation

Janis Chadsey-Rusch, Patricia Gonzalez,
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Since 1975, Public Law 94-142 has mandated that all children with handicaps should be provided with a free, appropriate public education in the least restrictive environment. The emphasis on least restrictive environment implies that many children with handicaps will be integrated with their normal school-age peers. Although many children with mental retardation have been physically integrated with their nonhandicapped peers, there has not always been a corresponding increase in social interactions between the two groups (Gresham, 1982).

Like other children, children with mental retardation will eventually reach adulthood. Generally, adults can be characterized as mature individuals who have acquired the skills and behaviors that enable them to be responsible, independent, productive, and fully functioning members of society (Chadsey- Rusch & Gonzalez, in press). Adults interact and form relationships primarily with other adults. Although these interaction patterns often occur in residential and recreational settings, they also occur in many work settings (Pogrebin, 1987).

Unlike the mandate for children, there is no legislative mandate that all adults with handicaps should work in the least restrictive environment or alongside nonhandicapped co-workers. However, the prevailing philosophy of recent federal policy (Will, 1984) and the 1983 Amendments to the Education of the Handicapped Act of 1973 (EHA P.L. 98-199) support the concept that workers with handicaps should be employed in integrated work settings. In addition, there are numerous supported employment model programs that illustrate the feasibility and desirability of having persons with handicaps work together with their nonhandicapped counterparts (Bates, 1986; Lagomarcino, 1986; Moss, Dineen, & Ford, 1986; Rusch, 1986; Vogelsberg, 1986; Wehman, 1986).

Although employment in integrated settings is desirable and possible, very little is known about the types of interactions that are likely to occur between workers with and without mental retardation. Greater emphasis has been placed on studying the components of the supported employment model and ways to enhance production skills than on studying the social interactions that occur in these settings (Chadsey-Rusch, 1986). Yet if we are concerned with replicating much of the mainstreaming results by hoping that mere physical placement will promote increased interactions between workers with and without mental retardation, then we must begin to look at the social interaction patterns that occur in employment settings.

A variety of assessment approaches can be used to study social interactions, for example, rating scales, sociometrics, and role plays. However, it is only through direct observation in natural contexts that one is likely to see typical social behaviors. Few studies have directly observed the social interactions between workers with and without mental retardation in integrated employment contexts. In a series of two studies, Lignugaris/Kraft, Rule, Salzberg, and Stowitscheck (1986) and Lignugaris/Kraft, Salzberg, Stowitscheck, and McConaughy (in press) observed the social interactions of employees with and without handicaps. In both studies, the workers were employed in a nonprofit business that specialized in refurbishing and selling household goods. Because the site employed primarily elderly and handicapped individuals and was nonprofit, it may not be representative of many competitive employment sites. However, the authors indicated that the site seemed more like competitive employment situations than sheltered workshops.

Interestingly, in both studies by Lignugaris/Kraft and his colleagues, there were few differences in social behaviors between the workers with and without handicaps. In fact, the only statistical difference between the two groups occurred in the area of joking and laughing. Lignugaris/Kraft et al. (1986) found that nonhandicapped workers joked and laughed more often than workers with handicaps, but were essentially similar in other areas such as the frequency of interactions with supervisors and co-workers, frequency of talking about work and nonwork-related subjects, requesting assistance, and criticizing others.

Although this information is useful, more research is needed which can describe more extensively the social interaction patterns between workers with and without handicaps. For example, because the employment setting cited in both of the Lignugaris/Kraft studies may not be representative of other competitive employment sites, there is a need to describe interaction skills in more representative settings. Also, the methodology used in the studies described above may have missed other important social behaviors owing to the use of an established checklist and an a priori code. In addition, because a checklist was used in the Lignugaris/Kraft et al. (1986) study, behaviors were only recorded after the observation period and not when they actually occurred, and they were recorded only once, because the response format was a simple yes-no option. Finally, because of the complex nature of social behaviors, there can be a great deal of variability in a behavior, depending upon the set of circumstances within which it occurs and the purpose for which it is used. For example, individuals may raise their hands to greet others, to speak, to be excused, or for no reason at all

(Trower, 1982). Consequently, the quality of the behavior (which has not been reported in previous studies) is just as important as the quantity of the behavior.

The purpose of the present study was to observe directly and record narratively the social interaction patterns of employees with and without mental retardation across seven different competitive employment sites. The data were analyzed to determine if there were differences between the two groups of employees in the frequencies of interactions as well as the quality and purpose of the interactions. These results are discussed in relationship to the implications they have for integrating workers with mental retardation into settings with nonhandicapped co-workers.

Method

Subjects and Settings

Sixteen individuals participated in this study, eight of whom were mentally retarded. The workers with mental retardation were competitively employed and received follow-up services from a local rehabilitation agency located in a medium-sized midwestern city. These workers were selected by agency personnel because they were working in settings where employers were likely to agree to participate in the study. The nonhandicapped workers were selected by their employers because they worked at the same time as the workers with handicaps and performed similar jobs.

Thirteen male and three female subjects participated in the study, and all subjects had completed 12 years of school and had been successfully employed for approximately 3 years. The primary diagnosis of the subjects with handicaps was mild mental retardation. The two groups are described in Table 1.

Table 1

Demographic Characteristics of Workers With and Without Mental Retardation

Characteristics	With Mental Retardation N = 8	Without Mental Retardation N = 8
Mean Age	32.7 years	25.1
SD	6.5	3.2
Sex		
Male	6	7
Female	2	1
Education	EMH & TMH Classrooms	Regular Classrooms
Mean IQ		
SD	63.6 (15.1)	-
AAMD Classifications		
Mild	6	-
Moderate	2	-
Mean Time on Present Job	3.3 years	3.4 years
SD	2.1	2.3

Data were collected in seven competitive employment sites. Most of the observations occurred in six food service settings where all of the subjects were kitchen laborers; one site was a local pizzeria and five sites were university dormitory settings. The seventh site was a printing service where the subjects performed a variety of jobs such as collating, binding, and printing.

Dependent Measures

Four dependent measures were used in the present study. The primary measure consisted of written narrative recordings made while observers recorded the social interactions of all participants. In addition to the narrative recordings, all participants were administered two measures that were developed specifically for this study: (a) a Social Network Questionnaire that was designed to assess friendship networks outside of work, and (b) a Participant Debriefing Questionnaire that was developed to assess subject perceptions about being observed. Finally, all of the supervisors at the employment sites were given the Work Performance Evaluation Form (WPEF) (White & Rusch, 1983), a Likert-type scale that measures employer's satisfaction of employee's job performance, responsibility, relationships with others, and ability to manage time.

Data Collection

Narrative recordings. Data collection procedures for the narrative recordings were the same as those reported in Chadsey-Rusch and Gonzalez (in press). These procedures were used to ensure that frequently occurring and important social behaviors were not missed because of an established a priori behavioral code and were recorded within the social context where they occurred.

Nearly all pairs of workers were observed five times during four different time periods or conditions: arrival at work, a break or lunch period, and two work periods (Work 1 and Work 2). The work periods were randomly selected from available periods throughout the day: however, Work 1 preceded Work 2 in all instances. Thus, there were approximately 20 observations of each subject which covered an approximate two-week time span. In two settings, however, it was not possible to gather 20 observations: In the pizzeria, the workers never took breaks, and in one of the dormitory settings, workers immediately went on break when they arrived at work, so that the arrival and break periods were combined.

Both groups of workers were observed during the same time periods for all conditions except during arrival, when workers' starting times varied frequently. Each observer would first randomly select whether to observe the worker with mental retardation or the worker without handicaps. Observations would then alternate between these workers until the observation period was over. The length of the observation periods for arrival and the two work periods was 40 minutes, allowing each subject to be observed for two 10-minute periods. Break or lunch periods varied in length from 15 to 30 minutes. Each worker was observed for half of each session; that is, for 7.5 to 15 minutes. Thus, each subject was observed for approximately 5.5 hours over the course of the study.

Other measures. The questions on the Social Network Questionnaire were asked during the initial meeting between the observer and the participant. Each interview lasted between 5 and 10 minutes. The Participant Debriefing questions were asked after the completion of all 20 observations; the interview took approximately 5 minutes. Supervisors completed the WPEF independently during the course of data collection in that setting.

Observers and Observer Training

Four individuals participated as observers in the study. Two of the observers were doctoral students in vocational technical education, had worked with individuals with mental retardation, and were experienced with direct observation methodology. The third observer was a senior in special education who was enrolled in a moderate and severe handicaps teacher-certification program. The fourth observer was the senior author of this manuscript.

All observers participated in training sessions before they conducted any observations. During the training sessions, observers viewed videotapes from two office settings and practiced recording the social interactions that occurred in the tapes.

All observers recorded behaviors for 5 minutes and then read their narratives aloud for comparison with those of the other observers. Feedback was given regarding the frequency and context of the social interactions described, the objectivity of the observations, and the observer's ability to record accurately the sequence of behaviors and events throughout the observation. Once data collection began, observers met weekly to discuss data collection procedures and any problems at the data collection sites.

Observers were trained to record an uninterrupted stream of behavior with as much detail as possible about the social interaction behaviors of a designated subject. Narratives were used to describe what the subject did and said as well as information about the setting and social context. Other individuals were recorded only in relationship to the person selected for observation. Observers essentially made a chronological record of all the main steps in any action. A sample of a narrative recording is included below.

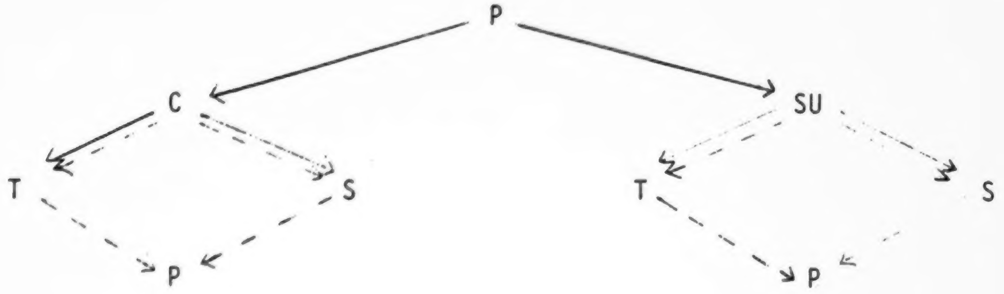
> At 10:23, the Participant (P) enters by the dock, turns left to dressing room, and disappears down the corridor. He passes a female co-worker with no comment. P enters the dock hall at 10:34 and greets (initiates) a supervisor. She responds and adds, "How are you?" P answers "Fine." The supervisor says, "I see you shaved this a.m." P says "Yeah" and punches in on the time clock. P goes toward the locker past a male co-worker who says, "Hello my friend." P does not respond. P dresses in his apron and hat and goes to the food line past another co-worker with no comment from either.

Analysis

All handwritten narratives were dictated and then typed. In order to analyze the narratives, codes were developed, defined, and assigned to the behaviors described within the narratives. (The coding categories and rules appear elsewhere in this volume.) All social interactions were coded in the following manner: the main initiator and the receiver of the interaction were noted, and each social interaction was coded as either nontask related or task related. In addition, interactions were also coded qualitatively for the purpose they served, for example, to direct, to question, or to request assistance. Finally, other codes, such as number of tasks completed, were also assigned to the narratives in order to describe ongoing behaviors. In all, there were 32 behavior codes and 11 purpose codes. The behaviors included in the codes were based upon patterns that were emerging from the data and from literature identifying behaviors that employers had cited as being important in competitive employment settings (e.g., Salzberg, Agran, & Lignugaris/Kraft, 1986). Figure 1 illustrates the sequence of the interactions.

Once the data were coded, they were analyzed along several dimensions. First, visual analysis procedures were used to determine if there were differences between the two groups in the 32 behavior sequences. Those variables that appeared to be different based upon visual inspection were then analyzed for statistical significance with a one-way multivariate analysis of variance (MANOVA) design, using the GLM Program from SAS (SAS Institute, 1985). In addition, a one-way MANOVA design and analysis was used to determine whether there were differences between supervisors' ratings on the WPEF for employees with and without mental retardation.

Figure 1. Sequence of Interactions Between Workers with Mental Retardation, Co-workers, and Supervisors



KEY:

P = PARTICIPANT
C = CO-WORKER
SU = SUPERVISOR
T = SOCIAL TASK-RELATED (To Direct, To Question, To Criticize, To Praise, To Offer Assistance, To Request Assistance)
S = SOCIAL NONTASK-RELATED (To Be Polite-Social Amenities, To Greet/Depart, To Tease, Joke, To Comment, Converse, Share Information, To Get Attention)

The purpose-code data were analyzed using the SAS t-test procedures (SAS Institute, 1985) to determine whether there were differences between the two groups regarding their social task-related and nontask-related interactions with co-workers and supervisors. In addition, descriptive statistics and qualitative analyses were used to describe further the purpose code measures, Social Network Questionnaire, and Participant Debriefing results.

Reliability Procedures

Two types of reliability were computed--intercoder reliability and interobserver reliability. Intercoder reliability was used to measure the agreement between two persons independently assigning codes to the same narrative. Interobserver reliability was used to measure the agreement between two observers independently observing the same subject at the same time.

Intercoder reliability. Intercoder reliability was calculated on 20% of the total number of observations. Random selection was used to obtain one observation from each time condition (i.e., Arrival, Break/Lunch, Work 1, and Work 2) for each subject. Both reliability checkers (the senior author of the manuscript and a doctoral student in vocational and technical education) coded the same narrative independently of one another.

Reliability was calculated using the point-by-point agreement method (Kazdin, 1982), where agreements are divided by agreements plus disagreements and multiplied by 100. An agreement was scored when both coders placed the same social interaction code, purpose code when applicable, and response code over the same sentence in the narrative. The average intercoder reliability score across all codes was 84%, and scores ranged from 78% to 91%.

Interobserver reliability. Measuring the interobserver reliability of narrative records is difficult because observers differ in their choice of words, emphasis, and amount of detail provided (Schoggen, 1978). In many studies of this type, agreement is only reported between analysts or coders. In the present study, however, interobserver reliability was calculated by two methods. In both methods, reliability checks were randomly selected across 10% of the total observation sessions. Two trained observers watched the same subject at the same time and independently completed their narrative recordings.

With the first calculation method, a group of 40 volunteers consisting of graduate and undergraduate students in education were asked to rate the similarity of pairs of narrative recordings on a Likert-type scale ranging from 1 to 5 (Gonzalez & Chadsey-Rusch, 1987). All raters were naive to the purpose of their task. The overall similarity rating assigned to the observations was 3.21 with a standard deviation of 1.1, which means that the raters judged the narratives to be moderately similar.

A second index of interobserver reliability was obtained once the codes were assigned to the narratives. Pearson product moment correlations were computed between the total frequencies of each code on all narrative records written simultaneously. The average interobserver correlation coefficient across all the codes was .75.

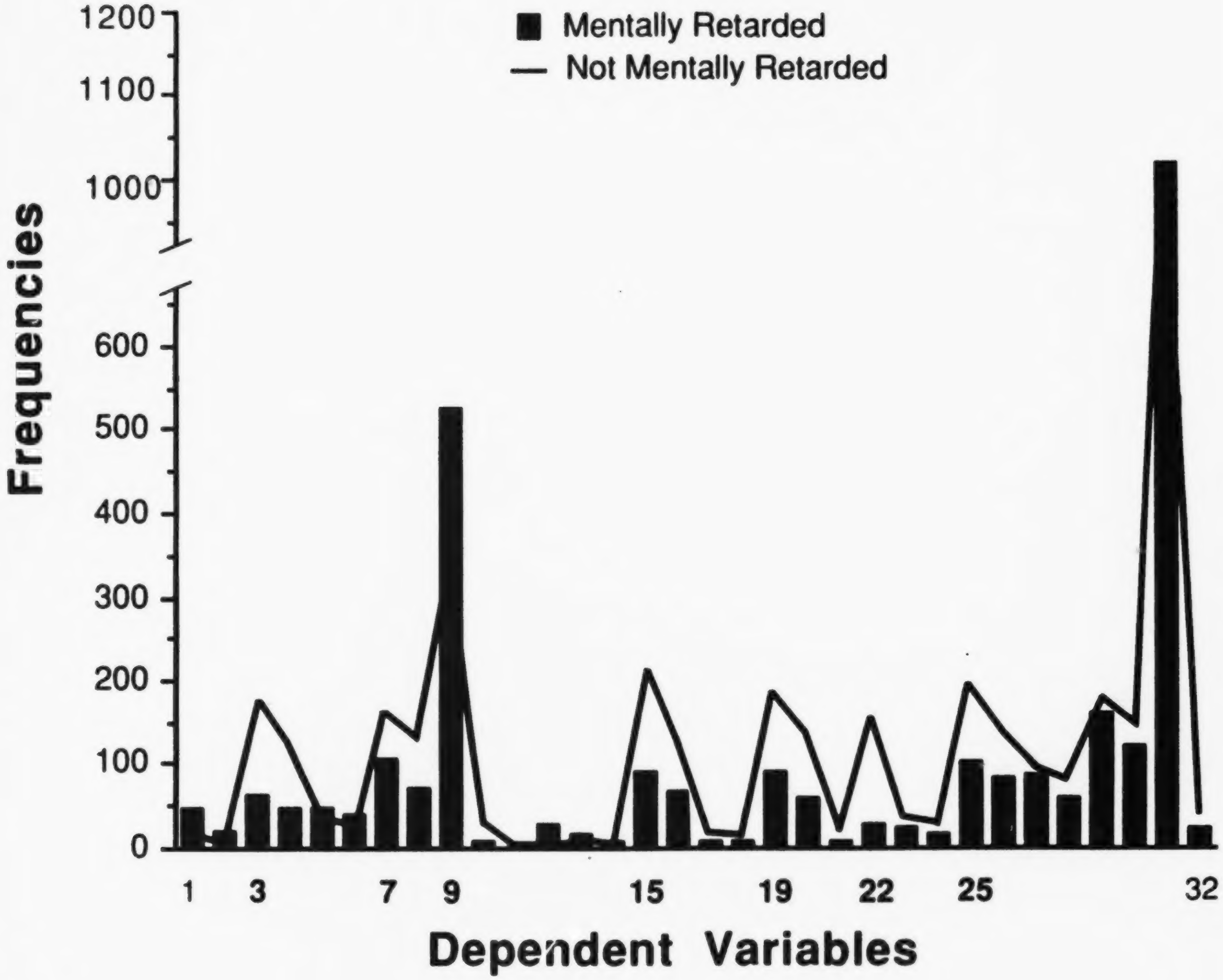
Results

The results are presented along the dimensions used to analyze the data. First, the visual analysis and MANOVA results are reported for the 32 behavior variables. Second, the results of the purpose code data are reported. Finally, the results of the WPEF, Social Network Questionnaire, and Participant Debriefing Questionnaire are presented.

Social Code Behavior Variables

The frequencies of interactions and tasks between workers with and without mental retardation for the 32 behavior variables are included in Figure 2. By visual inspection, there appeared to be differences between the two groups on seven variables: variable 3 (nontask interactions that the subjects directed to co-workers), variable 7 (nontask interactions that co-workers directed to subjects), variable 9 (opportunities for an interaction were present, but none occurred), variable 15 (interactions that the subject directed to co-workers, but it could not be determined if the interaction was task or nontask-related), variable 19 (interactions that co-workers directed to subjects, but it could not be determined if the

Figure 2. Frequencies of Interactions and Tasks Between Workers With and Without Mental Retardation



interaction was task- or nontask-related), variable 22 (interactions between co-workers and subjects, but it could not be determined who initiated the interaction nor whether the interaction was task or nontask related), and variable 25 (task related interactions that the subjects directed to co-workers).

In order to determine if there were statistical differences between the two groups, the seven dependent variables and one independent variable (group membership) were entered into a multivariate analysis equation. There was no statistically significant difference between the two groups (Hotelling-Lawley Trace = 1.1201, multivariate F (97,8) = 1.28, $\underline{p} < .36$).

Purpose Code Variables

In entry-level employment positions, workers are much more likely to interact with their co-workers than with their supervisors (Chadsey-Rusch & Gonzalez, this volume). Consequently, the purpose code data were analyzed for differences between social interactions with co-workers that were task-related and those that were nontask-related. Because there were no significant correlations between these variables, independent t-tests were used to determine if there were differences between the workers with and without mental retardation and their interactions with their co-workers.

The results indicate that overall, there was no significant difference between the social task-related and nontask-related interactions of nonhandicapped workers ($\underline{t}(14) = -.337$, $\underline{p} < .74$). However, there was a small but significant difference between workers with mental retardation and their co-workers on the same variable ($\underline{t}(14) = -2.205$, $\underline{p} < .04$). Workers with mental retardation were involved in more social task-related interactions (M = 34.125) than nontask-related interactions (M = 20.13).

The analysis used to determine possible differences between workers with and without mental retardation and their task-related interactions with co-workers indicated no differences ($t(14) = -1.387$, $p < .187$). However, there was a difference between both groups of subjects and their co-workers regarding interactions that were nontask related. Workers with mental retardation were engaged in fewer social nontask-related interactions with their co-workers ($M = 22.13$) than were the nonhandicapped workers ($M = 43.88$).

Table 2 displays the mean occurrence of the purpose of the nontask-related interactions by group. As can be seen, the largest mean differences between the two groups occurred for three purposes: teasing and joking, information, and greetings. Workers with mental retardation were only one-third as likely to be involved in teasing and joking interactions, one half as likely to be involved in interactions concerning the exchange of nonwork-related information, and almost one and one-half times as likely not to be involved in greetings with their co-workers.

There were no statistically significant differences in the interaction patterns between supervisors and both groups of workers for social nontask-related and task-related interactions.

Qualitative results. In order to understand further the context of the interactions where it appears there were differences between workers with and without mental retardation and their co-workers, a sampling of qualitative results are presented. These results highlight the details of the interactions. It is possible that this type of descriptive information can be useful in the development of training materials and purposes. The following excerpts are provided as examples of the variety of teasing and joking interactions that workers with mental retardation are likely to

Table 2

Mean Incidence of Interaction Between Workers With and Without Mental Retardation by Purpose

Purpose	With Mental Retardation N = 8		Without Mental Retardation N = 8	
	M	SD	M	SD
Directions	1.37	1.68	1.37	0.92
Questions	4.25	4.39	5.63	3.58
Criticism	0.88	1.81	0.13	0.35
Praise	--	--	--	--
Offers assistance	0.63	1.06	0.25	0.46
Requests assistance	--	--	0.13	0.35
Amenities	0.5	0.75	0.63	1.41
Greets	4.62	2.67	6.75	6.73
Teasing/Joking	5.13	4.05	17.38	12.25
Information	4.5	4.47	10.13	6.98
Attention	0.25	0.71	1.5	2.45

encounter on the job. In each example, P represents the employee with handicaps.

A male co-worker (C) comes down the aisle pushing a cart and says to participant (P), in a joking manner, "You awake?" P replies, "Yeah, I'm awake." C passes saying "You're in a daze, woman, in a daze!" P laughs.

C approaches P who is sitting at the break table. C sets her coffee cup on P's tray and says, "Take my cup for me, Sugar" and laughs. The other co-workers at the table laugh, and P sits and smiles.

P and C are discussing the merits of owning a car. C says, "Busses aren't so bad." P says she doesn't take the bus, she rides her bike. P adds, "I should put a motor on the bike." P and C laugh.

P leaves the work station to get some staples. C moves a huge stack of papers to P's work station. When P returns, C says jokingly, "There, that ought to keep you busy!" P smiles and says "Yeah."

Nontask-related information covered a variety of topics, such as the weather, current events, leisure pursuits, and relatives.

P and two co-workers are working together. One C says to P that someone only got three hits during a baseball game. The other C says, "The Mets lost." All three talk about the game.

P is sitting with a group of co-workers during break. One of the co-workers says he couldn't get served (in a bar) over the weekend. Everyone talks about it.

A C walks by and P says something to him about how he saw his brother at the workshop. The C says, "Yeah," and then walks on by.

A variety of greetings were used across the worksites, including such verbal phrases as "Hello," "Hi," "How are you?" and "Good morning," and nonverbal behaviors such as smiles and nods of the head. Of all the greetings involving co-workers, only 61% of them were responded to by the workers with mental retardation.

Work Performance Evaluations

In order to see if there were statistically significant differences between the two groups on supervisors' ratings, the WPEF (dependent variable) and group membership (independent variable) were entered into a multivariate analysis equation. There were no statistically significant differences between the two groups (Hotelling-Lawley Trace - 1.4963, multivariate F (4,9) = 3.366, $p < .06$), although significance at the alpha level of .05 was approached.

Social Network Questionnaire

The results of the Social Network Questionnaire are shown in Table 3. For the most part, it appears that both groups of workers liked their jobs

Table 3

Percentage of Responses on the Social Network Questionnaire

	With Mental Retardation N = 8			Without Mental Retardation N = 8		
Questions	Yes	No	NR	Yes	No	NR
Like job?	63	25	12	100		
Like people with whom you work?	88	12		88	12	
Do things outside of work with co-workers?	25	75		50	38	12
Ever been to co-workers house?	25	75		75	25	
Ever invited co-worker to your house?	25	75		50	50	
Have a lot of friends?	75	12		75	12	
Wish you had more friends?	75	25		25	50	25
Wish you had more friends at work?	38	50	12	25	38	37

and the people with whom they worked. There does not appear to be a great deal of socializing among workers outside of their jobs, although nonhandicapped workers were more likely to socialize with their co-workers outside of work than were workers with mental retardation.

Both groups of workers believed that they had a lot of friends. However, the workers with mental retardation wished that they had more friends, but only a few wanted more friends at work.

Participant Debriefing Questionnaire

Table 4 shows the results of the Participant Debriefing Questionnaire. As can be seen, more than half of the subjects in the study were not particularly embarrassed or uncomfortable by being observed. In addition, nearly half of the subjects in both groups forgot at times that the observers were there. The majority of the workers did not feel they acted differently around the observers, and those that did feel they acted differently stated that they probably worked harder than they usually did.

Table 4

Percentage of Responses on Participant Debriefing Questionnaire

	With Mental Retardation N = 8		Without Mental Retardation N = 8	
Questions	Yes	No	Yes	No
Feel embarrassed or uncomfortable?	25	75	50	50
Ever forget observers were there?	50	50	37	63
Feel you acted differently?	37	63	25	75

Discussion

In this study, the social interactions of competitively employed workers with and without mental retardation were directly observed and recorded with narrative techniques. Although the frequency or rate of social interactions suggested no differences between the two groups, the quality of the interactions suggested differences, particularly with respect to nonwork- or nontask-related interactions.

Actually, it was not surprising that there were no differences between the two groups in the frequency of interactions. Although the small size of the sample could have influenced this finding, it is also possible that because the workers with mental retardation had been employed for approximately three years, they could be said to be successfully employed. In addition, all of the workers with mental retardation had received their job training via the supported employment model, which has been shown to be effective in helping individuals with handicaps to acquire and to keep their jobs (Rusch, 1986). Finally, these results extend those found by Lignugaris/Kraft and his colleagues (Lignugaris/Kraft et al., in press; Lignugaris/Kraft et al., 1986), who found few differences in social interaction patterns between handicapped and nonhandicapped workers.

These results appear to contradict recent findings regarding social interactions involving handicapped children in mainstreamed school settings. Gresham (1982) found that nonhandicapped children interacted very little with mainstreamed handicapped children. It may very well be that when individuals with mental retardation grow up and work in integrated employment contexts with other adults, they are more likely to experience interaction rates that are similar to those of their nonhandicapped co-workers. However, closer inspection of the quality of these interactions indicates that these findings may need to be qualified.

Data from the social interaction purpose codes suggest that although workers with mental retardation were just as likely to be involved in social task-related interactions with their co-workers, they were not as likely to be involved in nontask-related interactions. The majority of social nontask-related interactions occurred when the workers arrived at work and during break periods. During arrival periods, the workers with mental retardation were involved in an average of 7 interactions, whereas the workers without mental retardation were involved in an average of 18 interactions. Similarly, during break, workers with mental retardation were involved in 6 interactions compared to 16 interactions among their nonhandicapped counterparts. In fact, during break, several workers with mental retardation were observed to sit alone while a group of their co-workers sat together at another table.

This information suggests a discrepancy in the type and quality of integration that might occur in work settings. It appears that physical integration and interactions about work-related matters are occurring, but that interactions involving nonwork-related matters, which are likely to influence friendship formations (Pogrebin, 1987), are not as likely to occur. Unfortunately, it is quite possible that the results of research on mainstreaming in the schools may be replicated in integrated employment settings.

In reviewing the mainstreaming literature, Gresham (1982) concluded that handicapped children should be taught the types of social skills needed for effective interactions and peer acceptance. Similar conclusions can be made with respect to the findings of this research. Because workers with mental retardation seem to be involved in fewer interactions involving teasing and joking, information sharing, and greetings, it is possible that instruction in these areas could enhance interactions with their co-workers. In addition, the qualitative results obtained from this study, which describe the social context within which these behaviors occur, may be useful for creating vignettes for instruction and practice (Chadsey-Rusch & Gonzalez, this volume).

It is also possible that co-workers could be persuaded or trained to involve their handicapped counterparts in more nontask-related interactions. If one assumes an ecological perspective, then behavior is viewed as a dynamic part of the interaction between the person and the environment--that is, people influence environments and environments influence people (Chadsey-Rusch & Rusch, 1988). If incongruities occur, then behaviors of individuals will have to be changed, or the context (the employment setting and the people in that setting) will need to be altered, or both the person and the environment will need to be transformed. Generally, we have tended to focus our efforts on changing the behaviors of individuals with mental retardation; perhaps it is time to put equal emphasis on changing the social contexts that these individuals are likely to encounter.

Although many friendships occur in work settings, it must also be remembered that many friendships occur outside the workplace (Progrebin, 1987). It was interesting to note that although workers with mental retardation wished they had more friends, only a few wanted more friends at work. It is difficult to speculate why this response occurred; perhaps the workers with mental retardation had experienced so few enjoyable interactions with their co-workers that they thought it wasn't worthwhile to pursue these friendships, or maybe they didn't understand the question, or perhaps they believed that more friends outside of work would be more satisfying. Because the workers with mental retardation had not done many things with their co-workers outside of work and had rarely been to one of their co-worker's homes, they might not realize that work friends can also be friends outside work.

Interestingly, workers with mental retardation and the nonhandicapped workers experienced similar interactions with their supervisors. This evidence was apparent from direct observation as well as from supervisor ratings on the WPEF. Supervisors did not interact very often with their staff members, and it is possible that differences between the groups may have become apparent had interactions occurred more frequently.

Although the data from this study provide information regarding the social interactions of workers with and without mental retardation, there are limitations to the generalizations that may be made. First, the sample of subjects was small and primarily male. It is possible that a larger sample consisting of an equal number of males and females would yield different results. Second, only two occupations were represented in this study, food service and printing; direct observation of different types of occupations might result in different social interaction patterns. However, these occupations are representative of the types of jobs that individuals with handicaps are likely to encounter at one time or another in their work history.

Another potential limitation of this study is the problem of observer reactivity. It is possible that the subjects in the study were influenced by observer presence and did not display their "normal" social interactions. However, when subjects were questioned at the end of the study, the majority of the subjects did not feel they acted differently when they were observed. Interestingly, in a recent review of the literature, Foster and Cone (1986) pointed out that in 19 studies, only 34% of the behaviors observed appeared to have been affected by observer presence. It is clear that more research is needed tc document the precise effects of observer reactivity.

In summary, this research suggests that although there may not be differences in the frequency of social interactions between successfully employed workers with mental retardation and their co-workers, there may be differences in the quality of the interactions. In particular, workers with mental retardation are less likely to be involved in nontask-related interactions, such as teasing and joking, information sharing, and greetings. Because nontask-related interactions may influence friendship formations and social support on the job, it is possible that training workers with mental retardation, or their co-workers, to engage in more nontask-related interactions may help to minimize these qualitative differences.

References

Bates, P. E. (1986). Competitive employment in southern Illinois: A transitional service delivery model for enhancing competitive employment outcome for public school students. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 51-63). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J. (1986). Identifying and teaching valued social behaviors in competitive employment settings. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 273-287). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J., & Gonzalez, P. (1988). Social ecology of the workplace: Employers' perceptions versus direct observation. (This volume.)

Chadsey-Rusch, J., & Rusch, F. R. (1988). The ecology of the workplace. In R. Gaylord-Ross (Ed.), Vocational education for persons with special needs (pp. 234-256). Mountain View, CA: Mayfield.

Foster, S. L., & Cone, J. D. (1986). Design and use of direct observation procedures. In A. R. Ciminero, K. S. Calhoun, & H. E. Adam (Eds.) Handbook of behavioral assessment (2nd ed.) (pp. 253-324). New York: John Wiley.

Gonzalez, P., & Chadsey-Rusch, J. (1988). Issues and methods of interobserver reliability in qualitative research. (This volume.)

Gresham, F. M. (1982). Misguided mainstreaming: The case for social skills training with handicapped children. Exceptional Children, 48, 422-433.

Kazdin, A. E. (1982). Single-case research designs: Methods for clinical and applied settings. New York: Oxford University Press.

Lagomarino, T. R. (1986). Community Services: Using the supported work model within an adult service agency. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 65-75). Baltimore: Paul H. Brookes.

Lignugaris/Kraft, B., Rule, S., Salzberg, C. L., & Stowitschek, J. J. (1986). Social interpersonal skills of handicapped and nonhandicapped adults at work. Journal of Employment Counseling, 20-30.

Lignugaris/Kraft, B., Salzberg, C. L., Stowitschek, J. J., & McConaughy, E.K. (in press). A descriptive analysis of social interaction patterns among employees in sheltered and non-profit business settings. Vocational Guidance Quarterly.

Moss, J. W., Dineen, J. P., & Ford, L. H. (1986). University of Washington employment training program. In F. R. Rusch (Ed.). Competitive employment issues and strategies (pp. 77-85). Baltimore: Paul H. Brookes.

Pogrebin, L.C. (1987). Among friends. New York: McGraw-Hill.

Rusch, F. R. (Ed.). (1986). Competitive employment issues and strategies. Baltimore: Paul H. Brookes.

Salzberg, C. L., Agran, M., & Lignugaris/Kraft, B. (1986). Behaviors that contribute to entry-level employment: A profile of five jobs. Applied Research in Mental Retardation, 1, 299-314.

SAS Institute (1985). SAS user's guide: Statistics, version 5 edition. Cary, NC: SAS Institute Inc.

Schoggen, P. (1978). Ecological psychology and mental retardation. In G. P. Sackett (Ed.), Observing behavior vol. I: Theory and applications in mental retardation (pp. 33-62). Baltimore: University Park Press.

Trower, P. (1982). Toward a generative model of social skills: A critique and synthesis. In J. P. Curran & P. M. Monti (Eds.), Social skills training (pp. 399-427). New York: Guilford.

Vogelsberg, R. T. (1986). Competitive employment in Vermont. In F. R. Rusch (Ed.). Competitive employment issues and strategies (pp. 35-49). Baltimore: Paul H. Brookes.

Wehman, P. (1986). Competitive employment in Virginia. In F. R. Rusch (Ed.). Competitive employment issues and strategies (pp. 23-33). Baltimore: Paul H. Brookes.

White, D. M., & Rusch, F. R. (1983). Social validation in competitive employment: Evaluating work performance. Applied Research in Mental Retardation, 4, 343-354.

Will, M. (1984). Bridges from school to working life. Programs for the Handicapped, March/April, 2.

This study was supported in part by the Office of Special Education and Rehabilitative Services, United States Department of Education, pursuant to contract number OEG 300-85-0160. However, the opinions herein do not necessarily reflect the position or policy of the Office of Special Education, United States Department of Education.

Identification of Co-worker Involvement in Supported Employment: A Review and Analysis

Frank R. Rusch and Kathleen E. Minch

Over the past few years, we have witnessed a growing trend to support workers with handicaps after competitive employment (Rusch & Mithaug, 1980; Wehman, 1981). This support includes several dimensions: (a) community-referenced assessment and job placement (Menchetti, Rusch, & Owens, 1983; Panscofar, 1986), (b) community-referenced instruction and job site advocacy (Stainback, Stainback, Nietupski, & Hamre-Nietupski, 1986), and (c) instructional training and evaluation after actual employment (Rusch, 1983, 1986). Although community-referenced assessment and job placement activities are fairly well documented in the applied literature, practices that define the "support" provided to target employees after competitive employment are less well understood. In particular, the roles that co-workers assume after placement are unknown.

Because of recent legislation (i.e., Rehabilitation Act of 1986), the importance of defining the supported employment model cannot be underestimated. Several programs of research have received long-standing attention for their focus upon supported employment (cf. Lagomarcino, 1986; Moss, Dineen, & Ford, 1986; Shafer, 1987). Over the past 10 years these research programs have focused upon identifying new methods of instruction and evaluation that have gained in popularity. Indeed, these programs of research, such as Paul Wehman's Rehabilitation Research and Training Center, have reported that several hundred individuals with handicaps are retaining their employment in regular work sites (Wehman & Kregel, 1985). These target individuals have characteristically been denied access to traditional rehabilitation and educational opportunities due to the severity of their handicaps.

The purpose of this article is to complement existing reviews of the supported employment model. Specifically, this review identifies emerging practices that define co-workers' involvement in supporting target employees after they have been rehired. Some of these practices have recently been reviewed by Shafer (1987), Wehman and Kregel (1985), and Rusch (1986). However, these reviews have not focused upon the explicit roles that co-workers have assumed when supporting employment of persons with handicaps. Consequently, this article sought to review the available literature to identify the actual roles that co-workers have assumed when the focus of the research report was to define new or improved methods that were applied after the subjects (workers) were competitively employed.

Method

Narrative Review Procedures

This review focused upon published reports that have appeared in the applied research literature. For our purposes the following journals were included in this review: Journal of Applied Behavior Analysis, Applied Research in Mental Retardation, Mental Retardation, Education and Training of the Mentally Retarded, Journal of Special Education Technology, Journal of the Association for Persons with Severe Handicaps, and Community Service Forum. Additionally, these articles were reviewed to determine whether they were based upon previous or ongoing research that was published elsewhere in an effort to identify fugitive literature that related to post-employment practices. For example, the Rehabilitation Research and Training Center at Virginia Commonwealth University publishes a series of monographs that report upon their ongoing research efforts, which are directed toward "supported competitive employment" (Wehman & Hill, 1982).

Articles were included in this review if they reported data collected on the job after the target employee was hired (i.e., employed). Employment was defined as placement in integrated work settings in which the target employee was paid for work. Articles that reported upon methods used in sheltered employment, pre-vocational, or educational environments were not included.

Results and Discussion

Table 1 lists nine studies that reported involving co-workers in one of five different ways. Specifically, this involvement included: (a) validating instructional strategies, (b) collecting subjective evaluations, (c) implementing training procedures, (d) collecting social comparison information, and (e) withdrawing training procedures in an effort to maintain target employment behavior(s).

Validating instructional strategies. When potential instructional strategies were used to change target behavior, co-workers typically were consulted to determine if these strategies were acceptable. Schutz, Rusch, and Lamson (1979) used an employer-validated procedure to reduce aggressive behavior of three food service employees with moderate mental retardation. Employers suggested that if similar aggression was displayed by co-workers who were not handicapped, the consequence of such aggression would be a warning and a one-day suspension. Consequently, when Schutz et al. applied warnings and suspensions, all three employees discontinued their aggression. In this study, using employer-validated techniques such as those found in the natural work setting not only met with employer approval but also was highly effective.

Collecting subjective evaluations. Subjective evaluation is a method used to evaluate social-interpersonal and work-performance skills through

Table 1

Studies Reporting Co-worker Involvement after Competitive Employment

Study	Validating Instructional Strategies	Collecting Subjective Evaluations	Implementing Training Procedures	Collecting Social Comparison Information	Maintaining Behavior
Schutz, Rusch, & Lamson (1979)	X				
Schutz, Jostes, Rusch, & Lamson (1979)		X			
Crouch, Rusch, & Karlan (1984)		X	X	X	
White & Rusch (1983)		X			
Rusch & Menchetti (1981)	X	X	X		
Rusch, Weithers, Menchetti, & Schutz (1980)		X	X	X	X
Rusch, Morgan, Martin, Riva, & Agran (1985)				X	X
Kochany, Simpson, Hill, & Wehman (1981)			X		X
Stanford & Wehman (1982)			X		X

judgments made by significant others in order to determine if the changes resulting from training are perceived as important (White 1986). (Significant others refers to persons who are in a position to judge the effects of instruction through ongoing contact with the target employee or expertise in the instructional areas. For example, employers, supervisors, and parents may be included as significant others.) Often, subjective evaluation is accomplished by asking how well the target employee is performing, teaching the target employee to perform, and then asking again whether the target employee is performing as expected.

Schutz, Jostes, Rusch, and Lamson (1980) utilized subjective evaluation to judge the quality of the sweeping and mopping performances of two food service employees with moderate mental retardation. Co-workers and supervisors were asked whether they would "accept this as a swept (mopped) floor" (p. 308) after completion of the task by the employee. Results indicated that when the job coach accepted the floor as clean, so did the co-workers and supervisors.

Crouch, Rusch, and Karlan (1984) used supervisor judgments to evaluate the effects of verbal-nonverbal correspondence training on task duration of three employees with moderate mental retardation. The correspondence training procedure suggests that employees be reinforced for saying what they are going to do and then doing what it is they said they were going to do (cf. Karlan & Rusch, 1982). Ten days after the initiation of correspondence training and once at the end of the study, supervisors were asked if the target employees' duration of task performance was a problem. On both occasions, all three supervisors stated that task duration and starting times were no longer a problem. Interestingly, although the target employees' supervisor stated that speed was not a problem, one employee failed to perform at the same or equivalent criterion set by his co-workers on all but one occasion preceding the first evaluation.

White and Rusch (1983) reported a study in which employers, supervisors, and co-workers rated 22 behaviors of employees with mental retardation. The target employees also self-rated their work performance. White and Rusch sought to determine if these four groups rated work performance differently. Interestingly, all four groups appeared to use different criteria, with employers rating overall performance the lowest, followed by supervisors. The target employees rated their own performance the highest. This study is important because it suggests that job coaches should expect different ratings from co-workers than from others.

Implementing training procedures. Training has been reported often as a critical element in the retention of individuals with handicaps (cf. Wehman, Renzaglia, & Bates, 1985). When providing on-the-job instruction, Shafer (1986) suggested that job coaches involve co-workers in one of several roles, including training and observing roles. Rusch and Menchetti (1981) increased the compliant work behavior of a food service employee with moderate mental retardation by using a co-worker-delivered consequence. While the job coach provided pre-instruction about the expected behavior and consequences in a practice-plus-warnings phase, the co-workers actually sent the employee home when he did not comply with their requests. A multiple baseline across supervisors, kitchen laborers, and cooks was used to demonstrate that after the employee was sent home once during a practice-plus-warning condition, the employee complied on all subsequent occasions with supervisors, kitchen laborers, and cooks, even though the intervention was never applied by cooks.

Collecting social comparison information. Rusch, Chadsey-Rusch, White, and Gifford (1985) define social comparison as the examination of a target individual's behavior before and after instruction with similar behavior of nonhandicapped peers. They posit that the range of acceptable behavior demonstrated by valued peers provides a standard against which the behavior of the target individuals may be judged. Rusch, Weithers, Menchetti, and Schutz (1980) compared the topics repeated by an employee with moderate mental retardation with topics repeated by his co-workers performing similar responsibilities. During baseline, the target employee repeated topics about five times as often as his co-workers. After implementation of a job coach-plus-co-worker feedback intervention directed toward topics repeated, the employee reduced his repetitions to levels approximating those of his co-workers.

In a similar study, Rusch, Morgan, Martin, Riva, and Agran (1985) utilized social comparison to evaluate the effects of a self-instructional package on the time spent working by two employees with mild and moderate mental retardation. In this study, the two target employees' performance was compared to that of two co-workers performing the same tasks. The job coach taught the target employees to use a self-instructional sequence in which each employee asked a self-directed question, answered the question, verbally guided her performance of the task, and self-reinforced. During baseline, the percentage of time spent working was below the standards set by the co-worker comparisons on almost all occasions for both employees. After self-instructional training, both employees increased their time spent working to levels equal to or above their co-workers' range of performance.

Maintaining behavior. Kochany, Simpson, Hill, and Wehman (1982) trained co-workers to maintain the acceptable behavior of a food service employee with moderate mental retardation. Acceptable behavior was defined as complying with requests made by the supervisor, refraining from physically violent behavior, and paying attention to co-workers. A changing-criterion design in which the employee was praised by the job coach for maintaining longer periods of acceptable behavior was implemented along with efforts to systematically withdraw the job coach from the employment site. When the job coach was present at the work site for 90 minutes per day, the supervisor assumed responsibility for verbally reinforcing the employee. Results showed that even after the job coach's time on site was reduced to 20-minute periods every other day, the target employee continued to maintain high levels of acceptable behavior under the supervisor reinforcement.

Stanford and Wehman (1982) taught co-workers to respond to social interactions initiated by two employees with severe mental retardation. The employees worked in a nursing home as dishwashers. Initially, a job coach prompted target employees to interact with co-workers, after which the job coach prompting the co-workers to respond to target employees' interactions. After intervention both target employees and co-workers interacted at rates that were higher than those before intervention was introduced.

This article identifies the roles co-workers have assumed when employees with handicaps were provided support. These roles were identified by reviewing applied research literature that specifically reported research conducted in integrated employment settings. The primary objective of this review was to identify co-workers' roles. On the basis of the available literature, we conclude that co-workers appear to be involved in one or more of five different activities: validating instructional strategies, collecting subjective evaluations, implementing training procedures, collecting social comparison information, and maintaining behavior.

References

Crouch, K. P., Rusch, F. R., & Karlan, G. R. (1984). Competitive employment: Utilizing the correspondence training paradigm to enhance productivity. *Education and Training of the Mentally Retarded*, *19*(4), 268-275.

Karlan, G., & Rusch, F. R. (1982). Correspondence between saying and doing: Some thoughts of defining correspondence and future directions. *Journal of Applied Behavior Analysis*, *15*, 151-161.

Kochany, L., Simpson, T., Hill, J., & Wehman, P. (1982). Reducing noncompliance and inappropriate verbal behavior in a moderate retarded food service worker: Use of a systematic fading procedure. In P. Wehman & M. Hill (Eds.), *Vocational training and job placement of severely disabled persons* (pp. 128-139). Richmond, VA: Virginia Commonwealth University, School of Education.

Lagomarcino, T. R. (1986). Community services: Using the supported-work model within an adult service agency. In F. R. Rusch (Ed.), *Competitive employment issues and strategies* (pp. 65-75). Baltimore: Paul H. Brookes.

Menchetti, B. M., Rusch, F. R., & Owens, D. (1983). Assessing the vocational needs of mentally retarded adolescents and adults. In J. L. Matson & S. E. Bruening (Eds.), *Assessing the mentally retarded* (pp. 247-284). New York: Gruene & Stratton.

Moss, J. W. Dineen, J. P., & Ford, L. H. (1986). University of Washington employment training programs. In F. R. Rusch (Ed.), *Competitive employment issues and strategies* (pp. 77-85). Baltimore: Paul H. Brookes.

Panscofar, E. L. (1986). Assessing work behavior. In F. R. Rusch (Ed.), *Competitive employment issues and strategies* (pp. 93-102). Baltimore: Paul H. Brookes.

Rusch, F. R. (1983). Competitive vocational training. In M. E. Snell (Ed.), *Systematic instruction of the moderately and severely handicapped* (pp. 503-523). Columbus, OH: Charles E. Merrill.

Rusch, F. R. (1986). Developing a long-term follow-up program. In F. R. Rusch (Ed.), *Competitive employment issues and strategies* (pp. 225-239). Baltimore: Paul H. Brookes.

Rusch, F. R., Chadsey-Rusch, J., White, D. M., & Gifford, J. L. (1985). Programs for severely mentally retarded adults: Perspectives and methodologies. In D. Bricker & J. Filler (Eds.), *Severe mental retardation: From theory to practice* (pp. 119-140). Lancaster, PA: Lancaster Press.

Rusch, F. R., & Menchetti, B. M. (1981). Increasing compliant work behaviors in a non-sheltered work setting. *Mental Retardation*, *19*, 107-111.

Rusch, F. R., & Mithaug, D. E. (1980). *Vocational training for mentally retarded adults: A behavior analytic approach*. Champaign, IL: Research Press.

Rusch, F. R., Morgan, T. K., Martin, J. E., Riva M., & Agran, M. (1985). Competitive employment: Teaching mentally retarded employees self-instructional strategies. *Applied Research in Mental Retardation*, *6*, 389-407.

Rusch, F. R., Weithers, J. A., Menchetti, B. M., & Schutz, R. P. (1980). Social validation of a program to reduce topic repetition in a non-sheltered setting. *Education and Training of the Mentally Retarded*, *15*, 208-215.

Schutz, R. P., Joste, K. F., Rusch, F. R., & Lamson, D. S. (1980). Acquisition, transfer, and social validation of two vocational skills in a competitive employment setting. Education and Training of the Mentally Retarded, 15, 306-311.

Schutz, R. P., Rusch, F. R., & Lamson, D. S. (1979). Eliminating unacceptable behavior: Evaluation of an employer's procedures to eliminate unacceptable behavior on the job. Community Service Forum, 1, 5-6.

Shafer, M. S. (1986). Using coworkers as change agents. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 225-235). Baltimore: Paul H. Brookes.

Shafer, M. S. (1987). Competitive employment for workers with mental retardation. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.), Progress in behavior modification (pp. 86-107). Newbury Park, CA: Sage.

Stainback, W., Stainback, S., Nietupski, J., & Hamre-Nietupski, S. (1986). Establishing effective community-based training stations. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 103-113). Baltimore: Paul H. Brookes.

Stanford, K., & Wehman, P. (1982). Improving social interactions between moderately retarded and nonretarded coworkers: A pilot study. In P. Wehman & M. Hill (Eds.), Vocational training and job placement of severely disabled persons (pp. 141-159). Richmond, VA: Virginia Commonwealth University, School of Education.

Wehman, P. (1981). Competitive employment: New horizons for severely disabled individuals. Baltimore: Paul H. Brookes.

Wehman, P., & Hill, M. (Eds.). (1982). Vocational training and job placement of severely disabled persons. Richmond, VA: Commonwealth University, School of Education.

Wehman, P., & Kregel, J. (1985). A supported work approach to competitive employment of individuals with moderate and severe handicaps. Journal of the Association for Persons with Severe Handicaps, 10, 3-11.

Wehman, P., Renzaglia, A., & Bates, P. (1985). Functional living skills for moderately and severely handicapped individuals. Austin, TX: Pro-ED.

White, D. M. (1986). Social validation. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 199-213). Baltimore: Paul H. Brookes.

White, D. M., & Rusch, F. R. (1983). Social validation in competitive employment: Evaluating work performance. Mental Retardation, 4, 343-354.

Evaluation of the Role of Job Site Supervisors in the Supervision of Employees with Severe Disabilities

Frank R. Rusch, Kathleen E. Minch, & Carolyn Hughes

Considerable recent research has focused upon the development of model vocational training and placement programs. These new model programs have been distinctive in that they focus upon placing persons with handicaps in competitive employment rather than sheltered workshops. The model of competitive employment that has received the most attention is the supported employment model (Rusch, 1986), when it focuses upon persons who will require intensive, ongoing support to earn wages when they are employed in regular work sites alongside persons without disabilities (P.L. 98-527; P.L. 99-506). Although several researchers have described the supervision that is likely to occur after a person is placed on the job, the specific types of supervision currently in practice are relatively unknown.

Recent research has begun to identify the types and degree of supervision that are provided by co-workers. Rusch and Minch (this volume) listed advocating, training, evaluating, observing, befriending, and associating as being reported by a handful of applied researchers who have enlisted the involvement of co-workers. Co-workers were defined as nonhandicapped employees who meet one or more of the following criteria: (a) work in the proximity of the target employee (within 600 sq. ft.), (b) perform the same or similar duties as the target employee, and (c) have breaks or eat meals in the same area as the target employee. A second study by Minch and Rusch (in press) identified the extent to which co-workers supervised target employees after these target employees had been employed for one year. Their findings suggest that persons with higher production and social skills appear to receive more training by co-workers than those with lower skill levels. Additionally, these individuals interacted socially with co-workers outside the workplace. Co-workers evaluated, advocated for, and associated more with lower-producing and less socially skilled employees. These results are important because they begin to suggest co-workers' roles that support the long-term employment of persons with handicaps.

One area of research that warrants study is the role of job site supervisors. These employees typically have hiring and supervisory responsibilities that are critical to the long-term employment of target employees. However, no research has been reported that investigates the role of job site supervisors in the supported employment process. Specifically, the roles that work supervisors play in the hiring and supervision of employees with handicaps in terms of job placement (e.g., willingness to allow employment training specialists to provide training), job-site training (e.g., how they have modified the job to enhance employee performance and how they train their own employees), ongoing assessment (e.g., how they evaluate their employees, how often they evaluate, and how they provide feedback), and follow-along supervision (e.g., what measures they take to ensure that employees maintain performance standards) need clarification. The purpose of this research was to identify the types of support provided by job site supervisors to target employees who have been competitively employed.

Methods

Participants

In order to assess the type of support provided to target employees in supported employment, ten supervisors of businesses that employed persons with handicaps were interviewed. An eleventh supervisor had been contacted, but he refused to be interviewed because he was afraid of a possible lawsuit involving confidentiality. The supervisors' names, business addresses, and occupational areas were provided by the local adult service agency responsible for placing persons with handicaps in competitive employment (Lagomarcino, 1986). Located in a midwestern university town with a population of 100,000, the businesses represented a wide range of occupational areas for persons with handicaps, including food service (N = 4), light industrial (N = 3), janitorial/maintenance (N = 2), and warehouse (N = 1). The number of employees working at the businesses ranged from 15 to 370. Three businesses were small (15 - 20 employees), 4 businesses were of medium size (21 - 100 employees), and 3 businesses were large (more than 100 employees).

Procedures

Through a process of literature review (Rusch & Minch, this volume) and consultation with four employment training specialists at the local rehabilitation agency (Lagomarcino, 1986), we identified activities that provided support to target employees in the supported employment process. These activities were grouped into four major components that constitute the supported employment model: job placement, job site training, ongoing assessment, and follow-along support (Shafer, 1987). In an effort to validate these activities socially with employers, we developed 16 interview questions based on the identified activities. Interviews included both open-ended questions (e.g., "How have you modified the job to enhance employee performance?") and yes/no questions (e.g., "Would you allow more frequent evaluations, for instance, monthly?"). The exact wording of each question and the activity to which it relates are shown in Table 1.

Table 1.
Competitive Employment Activities and the Interview Questions Assessing Each Activity.

Job Placement

1. What factors do you believe are important in hiring a person with handicaps?
2. Would you welcome support from an employment training specialist?
3. Would you welcome a stringent re-evaluation of the requirements of the job in relation to the job description?
4. Who is the person to contact in order to find out more about a specific job?
5. What emphasis do you place on social-interpersonal skills in the workplace?

Job Site Training

6. Would you participate in the formation of the Individualized Written Rehabilitation Plan?
7. How have you modified the job to enhance employee performance?
8. How do you train your employees?
9. How have you used co-workers to help in training?
10. Would you allow direct training on the job which includes keeping records on employee performance?

Ongoing Assessment

11. How do you evaluate your employees?
12. Would you allow more frequent evaluations, for example, monthly?
13. Do you have the same expectations for all employees with similar job descriptions?
14. Would your nonhandicapped staff feel threatened if they knew they were being used as the "standard" for acceptability?

Follow-Along Supervision

15. What measures do you take to make sure that your employees continue to work hard and do what they were originally hired to do?
16. Do parents or friends and relatives ever assist target employees in any manner? For example, do they call to indicate absences? Do they provide transportation? Do they help the employee work the actual job? Do they pick up the employee's paycheck?

Supervisors were contacted by telephone to ascertain their willingness to participate in an interview concerning their employment policies and procedures. If a supervisor consented, a 30-minute interview was arranged at the employment site. The first and second authors conducted the interviews by explaining the purpose of the interview to the supervisor, asking the supervisor to consider all his or her employees when responding, and then asking the supervisor the interview questions. Although the authors did not try to influence the supervisors' answers, they did attempt to define unfamiliar terms. For example, the term "Individualized Written Rehabilitation Plan" was explained to employers. Interviews were tape recorded to provide accurate interpretation of supervisors' comments.

Results

The results of the interviews are discussed according to the supported employment activity to which each question related. Additionally, responses that appeared to be of significant interest appear in Tables 2-4.

Job Placement (Questions 1 through 5)

Table 2 lists the factors that supervisors identified as important when considering whether or not to hire a job applicant. The supervisors identified several factors considered important in the hiring process. The most frequently cited factors were presentation and appearance (N = 5) and interest in position, motivation, and willingness (N = 5). Parenthetically, two supervisors mentioned that they were not influenced by a potential employee's need for money.

Supervisors in different occupational areas emphasized different factors when they were assessing a job applicant. For example, both of the supervisors employed in food services stressed punctuality, whereas light

Table 2.
Employee Characteristics Considered Important by 10 Hiring Supervisors

Employee Characteristics	Food Service N=4	Light Industrial N=3	Janitorial/ Maintenance N=2	Warehouse N=1	Total N=10	%
Presentation, appearance	2	1	1	1	5	50
Interest in the position, motivation, willingness	1	2	1	1	5	50
Good social skills, pleasant, cooperative, good manners	2	1	0	0	3	30
Punctuality	0	2	0	0	2	20
Background skills, work history, good references	1	3	0	0	4	40
Hand coordination	0	2	0	0	2	20
Availability of hours, flexible schedule	0	0	0	1	1	10
Interview skills (eye contact, listening skills)	0	1	0	0	1	10
Honesty	0	0	1	0	1	10
Need to work	0	0	1	0	1	10

industry supervisors stressed hand coordination, background skills, and work history.

All of the supervisors indicated that they would welcome support from an employment training specialist. One supervisor suggested that using an employment training specialist may decrease the number of practical jokes aimed at the target employee. Other supervisor comments included "very helpful" and "a real plus to get support."

All supervisors stated that an employment training specialist would be encouraged to re-evaluate the job requirements stringently. Even supervisors with detailed job standards agreed to allow re-evaluation of job descriptions. Supervisors justified their answers with such reasons as "job outlines are too broad" and "anything to get the job done."

When they were asked whom the employment training specialist should contact for more information about a specific job, 90% of the supervisors named the person who immediately supervised the employees.

Ninety percent of the supervisors placed a great deal of emphasis on social-interpersonal interaction skills in the work-place. Additionally, supervisors placed different emphases on social-interpersonal skills depending on whether or not the job included customer interaction or co-worker interaction. Five supervisors placed greater emphasis on social and interpersonal skills in a job that included customer interaction than in a job that did not. Six employers placed a strong emphasis on co-worker interaction. One light-industrial supervisor stressed that social skills were more important than work performance because "if employees bother the workers around them, everyone's work performance suffers." Another supervisor stated "If people are friendly and work well with each other...it seems to attract the customers." The types of social-interpersonal skills listed by supervisors included saying "hi" to customers and co-workers, (N = 2), complying with verbal directions (N = 1), and demonstrating manners (N = 1).

Job Site Training (Questions 6 through 10)

Two supervisors responded positively when asked if they would participate in a meeting to develop an Individualized Written Rehabilitation Plan (IWRP). Four other supervisors said that they would participate if the time commitment were not great. The final four supervisors were either undecided or not willing to participate in the IWRP meeting. Interestingly, both supervisors who agreed to participate worked in the food service industry, whereas three of the four supervisors who were unsure or would not participate worked in light industry.

The modifications of jobs made by supervisors to enhance employee performance are shown in Table 3. The most commonly suggested modifications included: redesigning position (N = 3), changing tasks (N = 3), improving wheelchair accessibility (N = 3), and providing picture schedules (N = 2).

The types and methods of training reported by the supervisors varied across the types of businesses in which they were employed. Five supervisors reported providing from one to two hours a week of direct training to new employees. Two supervisors provided an orientation for new employees that included a tour of the business site. Other methods of training included reading company handbooks (N = 2), showing training films and role play (N = 1), and providing training seminars for all company employees (N = 1). Additionally, nine supervisors reported that they would allow keeping records as part of on-the-job training. Supervisors qualified this statement by indicating that records could be kept if company personnel were not responsible for the record keeping.

Table 3.
Task Modifications Made by Employers to Enhance Employee Performance

Task Modifications	Food Service N=4	Light Industrial N=3	Janitorial/ Maintenance N=2	Warehouse N=1	Total N=10	%
Redesign position (modify the number and types of job tasks that the employee performs)	1		2		3	30
Change tasks (allow the employee to change jobs within the employment setting)	2			1	3	30
Picture schedules	1		1		2	20
Adjust fixtures		1			1	10
Simplify oral/written directions			1		1	10
Change hours					1	10
Modify setting						
Wheelchair accessibility	2		1		3	30
Temperature control (e.g., cool environment in summer)	1				1	10
Comfortable workplace	1				1	10

Nine of the ten supervisors reported the use of co-workers to assist with training. Most employers paired a new employee with a veteran employee who answered questions (N = 4), demonstrated job tasks (N = 5), provided information (N = 3), or showed the new employee around (N = 2). The only supervisor who did not use co-worker assistance reported that, as a general rule, "Co-workers should not be distracted from their work to train new employees."

Ongoing Assessment (Questions 11 through 14)

Ninety percent of the supervisors conducted some kind of formal written evaluation of all their employees. Of these supervisors, six used a different method of evaluation for first-year employees, and three supervisors had established a probationary period of 90 days in which the employee was evaluated during or at the end of the period. After the first year, six supervisors evaluated their employees annually while the other three supervisors evaluated every six months.

Nine of the ten supervisors indicated they would allow more frequent evaluations. The tenth supervisor, who would not allow more frequent evaluations, stated that providing additional time for evaluation would be a problem, and that all company employees should be evaluated in the same fashion. Eight supervisors stated that they would evaluate as often as monthly. One supervisor stated that monthly evaluations would be too frequent unless a major problem existed, but that bi-monthly evaluations would be acceptable. One supervisor suggested that more frequent evaluations of target employees may improve their performance.

Six of the supervisors reported that they had the same expectations when evaluating all employees with similar job descriptions. Two of these supervisors stated that all employees must meet a minimum standard of performance. Another supervisor indicated that a company cannot afford to lower the expectations for any employee. Four supervisors had differing expectations, depending upon an employee's capabilities. For example, two employers had lower expectations when evaluating target employees.

Six supervisors responded that their staff would not feel threatened if their performance was used as a standard for acceptability in evaluating target employees. One supervisor stressed the need to select a high-performing employee as a standard. Two supervisors felt that observing staff was unnecessary, because either they had set minimum standards of performance or disliked staff comparison. Two supervisors indicated that their staff would feel threatened if their performance was used as a standard for acceptability.

Follow-Along (Questions 15 and 16)

The supervisors described 11 separate measures in use to ensure that their employees continued to work hard and perform the tasks for which they originally were hired (Table 4). The most frequently mentioned strategies were retraining the employee (N = 3) and monitoring quality and quantity of job performance (N = 3). Other measures included daily supervision and employee recognition. Two supervisors mentioned that they had no specified method of maintaining employee work performance.

Supervisors indicated that parents, relatives, and friends assist employees in maintaining their work performance in several ways. Six of the supervisors said that parents or relatives call to indicate employee absences. In contrast, four supervisors discouraged anyone except the employee from calling to indicate an absence. Interestingly, one supervisor wanted employees to find their own substitutes if they were absent. How-

Table 4.
Measures Taken by Supervisors to Maintain Employee Performance

	Food Service N=4	Light Industrial N=3	Janitorial/ Maintenance N=2	Warehouse N=1	Total N=10	%
Retrain employee	2		1		3	30
Monitor job (quality, quantity)	1	1	1		3	30
Provide daily supervision	2				2	20
Provide employee recognition	1	1			2	20
No specified method		1		1	2	20
Arrange employee meetings			1		1	10
Institute discipline procedures			1		1	10
Provide financial incentives-promotions	1				1	10
Provide daily schedule	1				1	10
Enter peer pressure	1				1	10
Talk to employees	1				1	10

ever, all supervisors were willing to make exceptions in emergency situations.

No supervisor would allow parents, relatives, or friends to assist a target employee on the job. The most commonly stated reason was that the company was liable for any injuries sustained by persons not officially on the payroll. Furthermore, labor laws were also mentioned as a reason why persons not on the payroll could not assist with the job.

Nine of the supervisors indicated that some employees have parents, relatives, or friends who provide transportation. Additionally, two supervisors reported that with written consent, they would release an employee's paycheck to a family member or friend. In contrast, three other supervisors expected each employee to pick up and sign for his or her own paycheck.

Discussion

The results of interviews with ten supervisors in businesses that employ individuals with handicaps showed that job site supervisors were directly involved in providing some support, including job placement, job site training, ongoing assessment, and follow-along supervision. Specific activities included hiring the employee, modifying the job, providing direct training, assisting co-workers in providing employee support, evaluating the employee, and providing incentives to maintain employee work performance. Additionally, all supervisors indicated that they would welcome assistance from an employment training specialist in order to provide additional support to target employees.

The results of this investigation support and extend a growing literature that has focused upon the role of co-workers on the job, particularly in relation to the supported employment model. Rusch and Minch (this volume), Minch and Rusch (in press), and Shafer (1986) have reported co-worker roles similar to those reported in this investigation. Training and evaluating the target employee appear to be supervisor-related, as well as co-worker-related functions. Fifty percent of the supervisors interviewed in this investigation reported providing up to two hours of direct training to new employees. Ninety percent of the supervisors indicated that they would allow co-workers to assist in training. Similarly, 90% of the supervisors conducted some form of formal written evaluation.

There is no published research on the role of job site supervisors in the supported employment process, despite an extensive literature demonstrating the effectiveness of supported employment (Lagomarcino, 1986; Rusch, 1986; Rusch, Chadsey-Rusch, & Lagomarcino, 1986; Rusch & Mithaug, 1980; Shafer, 1987). Prior research has suggested that co-workers who have job responsibilities similar to those of target employees are the primary supporters (cf. Shafer, 1987). This investigation found that supervisors would allow their job descriptions to be re-evaluated and possibly redesigned. They also indicated that they would allow tasks to be changed, accessibility to be improved, and pictures to be used to guide and direct target employee performance.

Several areas of future research are suggested by the results of this investigation. Although the support role of co-workers who share similar work responsibilities has been suggested as a major factor in the long-term employment of target employees, it may well be that supervisors also contribute significantly to job retention. Future research clearly is needed to separate the involvement of supervisors and co-workers. Additionally, research that identifies supervisor involvement as a function of job type may be warranted. In this investigation, there were several differences between the responses of food service and light industrial supervisors. For example, food service supervisors indicated that they would consider some direct involvement in meetings that focused upon planning the type of support to be provided to target employees, whereas light industrial supervisors were undecided about or not willing to participate in individualized rehabilitation planning.

In summary, although only ten supervisors were interviewed in this investigation, the results of these interviews provide strong evidence of supervisor involvement in the long-term employment of employees with handicaps. This investigation suggests that job site supervisors are actively involved in training and evaluating target employees and that they would welcome professional consultation from employment training specialists.

References

Lagomarcino, T. R. (1986). Community services: Using the supported work model within an adult service agency. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 65-75). Baltimore: Paul H. Brookes.

Minch, K. E., & Rusch, F. R. (in press). Factors related to the support provided by co-workers to employees with handicaps. Applied Research in Developmental Disabilities.

Rusch, F. R. (1986). Developing a long-term follow-up program. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 225-232). Baltimore: Paul H. Brookes.

Rusch, F. R., Chadsey-Rusch, J., & Lagomarcino, T. (1986). Preparing students for employment. In M. E. Snell (Ed.), Systematic instruction for persons with severe handicaps. (3rd ed.) (pp. 471-490). Columbus, OH: Charles E. Merrill.

Rusch, F. R., & Minch, K. E. (1988). Identification of co-worker involvement in supported employment: A review and analysis (this volume).

Rusch, F. R., & Mithaug, D. E. (1980). Vocational training for mentally retarded adults: A behavioral analytic approach. Champaign, IL: Research Press.

Shafer, M. S. (1986). Utilizing co-workers as change agents. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 215-224). Baltimore: Paul H. Brookes.

Shafer, M.S. (1987). Competitive employment for workers with mental retardation. In M. Hersen, R. Eisler, & P. Miller (Eds.), Progress in behavior modification (Vol. 14, pp. 86-107). Newbury Park, CA: Sage.

Social Ecology of the Workplace: Coding Categories and Rules

Janis Chadsey-Rusch
and
Patricia Gonzalez

The purpose of this document is to describe the coding categories and rules that were generated from narrative recordings of the direct observation of 16 workers--eight with and eight without handicaps--in seven different competitive employment settings. The coding categories are based upon 20 observations per subject collected during four time periods over two to three weeks: (a) arrival, (b) break/lunch, and (c) two randomly selected work periods. Each observation period was approximately 20 minutes in length, except for the break/lunch period, which ranged in duration from 5 to 15 minutes.

This article describes the social interaction flow chart that was generated from the observations, the definitions for all of the codes, the rules that were used to apply the codes to the narrative recordings, and the way the data sheet was used to tally the codes from the narrative recordings. In addition, the rules used to determine agreement between two raters when they assigned codes to narrative recordings are also included. Agreement was determined by the point-by-point agreement method of dividing the agreements by the agreements plus disagreements and multiplying by 100. Inter-rater agreement over 2[illegible] of the narrative recordings ranged from 78% to 91% with an average agreement rate of 84%.

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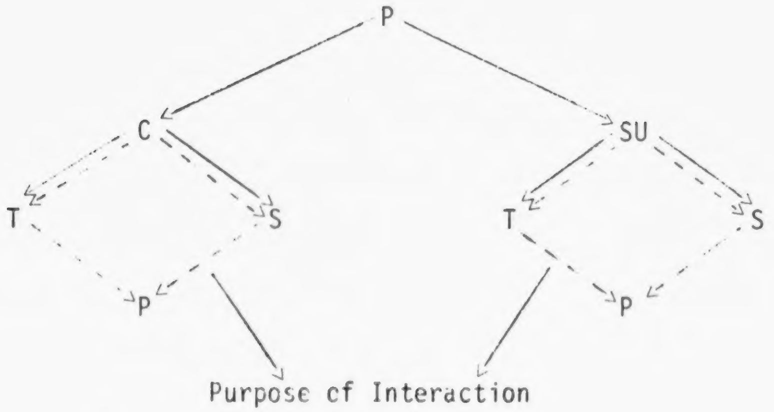
Figure 1. Social Interaction*


P
C
SU
T
S
T
S
P
P
Purpose of Interaction

*P = Participant; C = Co-worker; SU = Supervisor; T = Task/Work; S = Social/Non-Task Related

The participant (P) was the focus of each observation. The codes represent the interactions that P directed to the co-workers (C) or supervisors (SU). Each interaction was then coded as task or work related (T) or social/non-task related (S). In addition, the purpose of the interaction was also coded as a means to direct (D), question (Q), criticize (C), praise (P), offer assistance (O), request assistance (R), be polite/use social amenities (A), greet/depart (G), tease/joke (T), comment/share information (I), or get attention (H). Thus, an interaction might look like this: (P)IS ----> C/T, which means that the participant initiated an interaction that was social in nature to the co-worker and the purpose of the interaction was to tease and joke.

In addition, interactions that were directed to the participants by their co-workers or supervisors were also the focus of the observations. These interactions were coded for being task or social related in nature and for purpose. Thus, the following interaction (S)IT ----> P/D indicates that the supervisor directed an interaction that was task related to the participant and the purpose of the interaction was to direct.

Social Ecology Codes

1. (P)IS ----> S
2. R(S)
3. (P)IS ----> C
4. R(C)
5. S(IS) ----> p
6. R(P)
7. (C)IS ----> P
8. R(P)
9. NINT
10. PPC
11. NPC
12. BB
13. GC P ----> S
14. R(S)
15. GC P ----> C
16. R(C)
17. GC S ----> P
18. R(P)
19. GC C ----> P
20. R(P)
21. GC X <----> P
22. GC C <----> P
23. (P)IT ----> S
24. TR(S)
25. (P)IT ----> C
26. TR(C)
27. (S)IT ----> P
28. TR(P)
29. (C)IT ----> P
30. TR(P)
31. # TASKS
32. SIMST
33. D*
34. Q
35. C
36. P
37. O
38. R
39. A
40. G
41. T
42. I
43. H

Definitions And Rules For Scoring

P initiates an interaction that is social: (P)IS ----> S or (P)IS ----> C

Definition. Any verbal exchange initiated by P that is unrelated to tasks required on the job, objects associated with the job, or job responsibilities (being at work on time, wearing required dress).

Examples:

1. "Did the Cards win last night?"
2. "The only real friend I got here is Rich."
3. P asks female co-worker a question and laughs.
4. "Now, I ain't gonna go out and drink anymore."
5. Any joke, response, comment, question, or gesture that elicits laughter from one or more people.

Rules for Scoring. Score this category by placing the code for the purpose of the interaction (e.g., D for "to direct") in the appropriate column on the tally sheet describing the recipient of the interaction (i.e., co-worker (P)IS ----> C or supervisor (P)IS ----> SU). If P makes a comment otherwise fitting this definition, but there is no one in the vicinity to overhear (see Bizarre Behavior), or it is said to the observer--do not score in this category.

Place all purpose codes in order of their occurrence within the session from left to right, beginning a second line if necessary. Each separate interaction should be circled. For example, (P)IS ----> S.

Ⓣ Ⓠ

If unusual or important interactions occur, write these in the comments section indicating the session number. This should be done in relation to all subsequent codes described in this document. If the topic of the interaction can be determined, write this in the section provided along with the appropriate session number.

Supervisor or co-worker initiates an interaction that is social:

(S)IS ----> P or (C)IS ----> P

Definition. Any verbal exchange directed to P (or to a group which includes P) that is unrelated to tasks required on the job, objects associated with the job, or job responsibilities (e.g., being at work on time, wearing required dress).

Examples:

1. /C says hi to P/
2. /C says "Did you go out with the guys?"/
3. Jokes, comments, questions, gestures or responses that elicit laughter from one or more people.

Rules for Scoring. Score this category by placing the code for the purpose of the interaction (e.g., D for "to direct") in the appropriate column describing the initiator of the interaction (i.e., co-worker (C)IS ----> P or supervisor (S)IS ----> P).

Place codes in order of their occurrence within session from left to right, beginning a second line if necessary. Each separate interaction should be circled. For example, (C)IS ----> P.

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Response to Interaction That Is Social: R(S) or R(C) or R(P)

Definition. Any verbal acknowledgement or behavior following an initiated interaction or successive interactions that are social, including sentences or answers, positive conversational feedback (e.g., yeah, uh-huh), obscenities, and noises (e.g., grunts, groans, sighs). Any motoric acknowledgment or behavior following an interaction that is social, which includes smiling, frowning, shaking head, waving, pointing, winking, and shrugging shoulders. Also, if the narrative specifies that the respondent is listening or attending, score as responding; do not score mere eye contact. If the respondent initiates nonverbal behavior immediately after the initiation, score as a response. For exampTe, the co-worker asks the P to get her a Kleenex/the P leaves the room./

Rules for Scoring. Score this category by placing a (+) or (o) in the column that refers to the respondent, or the person receiving the interaction, or who could have responded to the interaction (i.e., the participant R(P), the co-worker R(C), the supervisor R(S). A (+) should be recorded when any response (as defined in the definition above) occurs. If a single response, following successive initiated interactions, adequately addresses these statements, score all as (+) (e.g., "Did you chop the onions?" "Do you have enough lettuce?" - "Yes"). A (+) should also be recorded when the narrative states that, following an interaction, conversation ensued for a certain length of time (e.g., 10 seconds). In this case a response (or attending) is assumed. A (o) should be recorded if the respondent made eye contact only, did not otherwise respond, or the narrative states that the observer could not detect a response. For instance, if the SU directs an IS to P but the C responds, place a (o) in the column for R(P) and do not score R(C). All initiations require a response code except the purpose code for offer of assistance (O). If a response can also be coded as a purposeful initiation (other than Information or Greeting as a response to a greeting), it should be coded as such. For example, /S says "What did you do last night?"/P says "huh?"/C says "Are you going to drink anymore?"/P says "Nah, I ain't gonna drink no more" and everyone laughs./ Thus, "Nah I ain't gonna drink no more" would be scored as a response and as a teasing initiation directed to the co-workers. If an interaction is scored and it is followed by a response, then the interaction is repeated. It should be scored again.

For each IS scored, a (+) or (o) must be recorded in the appropriate response column except for the purpose code for offer of assistance (O). The order of occurrence must correspond to the IS.

General Conversation: GC P ----> S or GC P ----> C or GC S ----> P or GC C ----> P or GC S <----> P or GC C <----> P

Definition. This situation occurs when the initiator of the interaction is unknown but the observer describes P as speaking, talking commenting, conversing, or responding to an interaction with S/C (e.g., GC S <----> P would be used for: /S and P talk about baseball/ and /S converses with P/ and (2) when the initiator of an interaction is known, but determination of IS versus IT is unclear. Do not score pointing as an initiation, only as a response.

Rules for Scoring. Use a hatch mark or Purpose Code in the appropriate column: If P is talking with C, record under GC P <----> C; if P is talking with S, record under GC P <----> S. If P/C/S initiates a conversation but the narrative is unclear whether it should be scored IS or IT, place a hatch mark or purpose code in the column corresponding to the direction of the interaction (e.g., P ----> S indicates that participant initiates to supervisor). For each initiation, record a (+) or (o) in the response column (see IS or IT for specific guidelines in judging the presence (+) or absence (o) of a response). Record each occurrence of the interaction fitting the above description except when the observer consecutively repeats the same interaction within the narrative or states that the interaction is continuing. If an interaction is scored and it is followed by a response, then repeated, it should be scored again.

If a response can also be scored as a GC with a purpose for initiation (other than Information), it should be coded as such. For example, following a question, P shakes his head no and gives a direction (R(P)+ and GC P ----> C/D).

Potential Social Interaction Situations (NINT)

Definition. A situation where P is in close proximity to S/C but there is no verbal or physical exchange. This situation exists when P and S/C stand, pass, or sit within 4 feet of each other, or when the observer has used terms such as nearby, close, near, next to, neighboring, there is no interaction, no comment is made, they did not speak. It also exists during a situation of intentional isolation, that is, when P moves away from a group or individual or sits in an isolated, solitary place where there is an opportunity to sit with others. Exception--Do not score NINT if an Offer of Assistance (O) is followed by no response or accompanies no verbal interaction.

Rules for Scoring. Use a hatch mark in the appropriate column (NINT) to record each situation fitting the above description. NINT can be scored repeatedly if the same individual passes by P without interacting. Score only one NINT if two people pass simultaneously without interacting. Do not code NINT when the observer states that the situation is continuing (e.g., the participant is still standing next to a co-worker without interaction), or when an interaction has occurred and is followed by no interaction (e.g., P and C are sitting side by side eating, they interact, then continue eating with no interaction).

Positive Physical Contact (PPC)

Definition. Any physical contact or attempted physical contact interpreted by the receiver as either positive (i.e., no negative reaction--see definition for NPC--smiling, laughing, positive comments, reciprocating) or neutral (i.e., no verbal or physical response). Note: Throwing something at another (e.g., wet rag) in an effort to hit them is a PPC or NPC depending on the response. Playing "catch" is not recorded in this category.

Rules for Scoring. This will be scored under PPC for each occurrence using the symbols for P/C/S and an arrow indicating the direction of the contact. For example if C pats P on the back and P smiles, the following would be recorded under PPC: C ----> P. If P reciprocates and C responds positively, another entry would be made in this column: P ----> C. Do not score accidental contact such as bumping, stepping on toes, or running into others.

Negative Physical Contact (NPC)

Definition. Any physical contact or attempted physical contact interpreted by the *receiver* as negative. Negative responses include expressions of pain; frowning or scowling; verbal negatives including, "cut it out," "stop," "get out of here," cursing; and threatening remarks or gestures. Positive reactions (e.g., smiling) should indicate a joke and should be scored under PPC.

Rules for Scoring. Follow the same rules as PPC using NPC column.

Bizarre Behavior (BB)

Definition. Behavior emitted by P which might be considered socially inappropriate by others in the setting. Bizarre behavior includes talking to self; self-stimulation; staring; odd posturing; self-manipulation of genitals; lewd remarks, gestures, actions; nose picking; "off-the-wall" remarks.

Rules for Scoring. Record a hatch mark in the appropriate column (BB) for each separate instance of these behaviors, i.e., if observer repeats the same behavior in the narrative without indicating a pause of change in the behavior of the P or context of the situation, score only once.

Interactions Initiated by P That Are Task Related (P)IT ----> C or (P)IT ----> S

Definition. Any verbal or motoric interaction initiated by P which is related to the job, including tasks required on the job, tasks directed by another to complete or assist in as part of the services rendered by the employer, objects associated with the job, job responsibilities (i.e., being at work on time or wearing required dress), feelings about the job, job gossip, or work-related social events.

Examples:

1. "Go get dressed, there is a lot to do today."
2. "What did you spill on the floor?"
3. The co-worker asks P to help her open a box.
4. Co-worker asks P if they had a disciplinary meeting on Thursday.
5. P asks if the yogurt is only for the students.

Rules for Scoring. Score this category by placing the code for the purpose of the interaction in the appropriate column describing the recipient (i.e., co-worker (P)IT ----> C or supervisor (P)IT ----> S of the interaction). For example, (P)IT ----> C.

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If P makes a comment otherwise fitting this definition, but there is no one in the vicinity to overhear (see Bizarre Behavior) or it is said to the observer--do not score in this category.

Place purpose codes in order of their occurrence within the session from left to right, beginning a second line if necessary.

Interactions Directed to P That Are Task-Related (S)IT ----> P or (C)IT ----> P

Definition. Any verbal or motoric behavior directed to P (or a group that includes P) that is related to the job, including tasks required on the job, tasks directed by another to complete or assist in as part of the services rendered by the employer, objects associated with the job, job responsibilities (i.e., being at work on time, wears required dress), feelings about the job, job gossip, or work-related social events.

Examples:

1. S says, "P, those onions are too thick."
2. Co-worker asks why P is late.
3. Co-worker asks P for help washing dishes.

Rules for Scoring. Score this category by placing the code for the purpose of the interaction in the appropriate column describing the initiator of the interaction (i.e., co-worker (C)IT ----> P or supervisor (C)IT ----> P).

Place codes in order of occurrence from left to right and begin a second line if necessary.

Response To Task Interaction TR(S) or TR(C) or TR(P)

Definition. Any verbal or motoric acknowledgment or behavior following an initiated interaction or successive interactions that are task-related. Verbal behavior might include sentences or answers, positive conversational feedback (e.g., yeah, uh-huh), obscenities, noises (e.g., grunts, groans, sighs), and acknowledgment of understanding (e.g., OK) or agreement. Motoric acknowledgment or behavior included in this category would involve head shakes, pointing, displaying the object of concern, making the handsign for OK/saluting, or immediate undertaking of directed task (i.e., compliance). If the narrative specifies that the respondent is listening or attending, score as a response, but do not score mere eye contact. If the respondent initiates nonverbal behavior immediately after the initiation, score as a response. For example, /The co-worker asks P to get some dishes/P leaves the room/.

Rules for Scoring. Score this category by placing a (+) or (o) in the column that refers to the respondent or the person receiving the interaction who could have responded to the interaction (i.e., the participant TR(P), the co-worker TR(C), the supervisor TR(S). A (+) should be recorded when any response (as defined above) occurs. A (o) should be recorded if the respondent (1) made eye contact only, (2) did not otherwise respond, or (3) the narrative states that the observer could not detect a response. If, for instance, S directs P to mop floors but C responds, place a (o) in the column for TR(P) and so not score TR(C). All initiations require a response code except the purpose code (O), offer of assistance. If a response can also be coded as a purposeful initiation (other than

Information), it should be coded as such. For example, /S says "Give me the soap"/P says "Help me scrape trays, first"/. If an interaction is scored and is followed by a response, *then* repeated, it *should* be scored again.

For each IT scored, a (+) or (o) must be recorded in the appropriate response column except for purpose (o). The order of occurrence must correspond to the IT.

Simultaneous Social/Task Interaction SIMST

Definition. Any situation in which P engages in a IS, GC, or PPC as an initiator *or* respondent and at the same time is engaged in a IT or on-task behavior related to job requirements/demands (see Definition #T). To score SIMST, the *text* must specifically indicate the simultaneous nature of these events.

Rules for Scoring. Record a hatch mark in the appropriate column (SIMST) for each *separate* instance of this situation. If the observer repeats the same situation in the narrative without indicating a pause or change, score only once.

Number of Different Work Tasks #T

Definition. A work task is a duty that is part of P's job requirements. It also includes any work task unique to a given situation, that is, as directed by another or in attempts to assist another in performing their job duties. Exceptions--The task must be related to the services rendered by the employment setting (i.e., car repair in a food service setting does not qualify), and the task cannot receive any negative repercussion from C or S (i.e., S asks P, "Why don't you do your own job?").

Rules for Scoring. Record a hatch mark at each change of task or behavior (i.e., from cleaning sink to loading dishwasher to turning the dishwasher on), including tasks unique to situations (defined above). If the observer describes a task repeatedly in the narrative without indicating a pause or change, score only once. The same task, however, can be scored multiple times if there is an intervening pause (e.g., IS) or change in task (e.g., helping another) within the narrative. An intervening NINT does not cause the task to be scored again.

If the narrative says "goes to an area or stands in an area," do not score as #T unless work is performed. Also, there can be a #T with another category--that is, a task undertaken as a response to direction: /S says, "Go wash dishes"/P begins to wash dishes./ Getting an object and then taking it somewhere should be scored as two #T's. If P exits the area and returns with an object, score one #T.

Purpose Codes

To Direct (D)--A verbal statement or question, motoric gesture, or both asking or demanding P/C/S to engage or not engage in a verbal or physical behavior (e.g., "Do this paper gluing first."/ /Why don't you come over to my house?/ /Can you hand me a spatula?/). If P/C/S is asked not to do something, this can also be scored as C, a criticism, e.g., "Don't sweep the floor."

To Question (Q)--A verbal statement in the interrogative form directed to P/C/S in order to obtain information or clarification. This should also include implied interrogatives (e.g., "So you're assigned to mop the floor."). Other examples include, "Did you go out last night?" and "Have you cut the order yet?"

To Criticize (C)--A derogatory, corrective, or punishing statement or question regarding P/C/S's family (e.g., "Your sister sounds like a bitch."), friends (e.g., "Your friend gets into a lot of trouble?"), possessions (e.g., "Your car is in such bad shape that I would buy a new one."), appearance (e.g., "You need a hair cut."), and behavior (e.g., "That is not the way I told you to slice those vegetables." "The floor is too wet"). Criticisms may often be scored with a D or Q.

To Praise (P)--A complimentary statement regarding P/C/S's family (e.g., "I wish my mom was more like your mom."), friends (e.g., "You are lucky to have such supportive friends."), possessions (e.g., "I like your new purse."), appearance (e.g., "Great tan."), and behavior (e.g., "You are working so fast I'm having trouble keeping up with you," or "ok," or "fine," or "good job.").

Requests for Assistance (R)--Asking P/C/S to help in the completion of a work-related task (e.g., "Help me unload this order, OK.?), or social-related task (e.g., "Will you help me get cokes for everybody?").

To Offer Assistance (O)--A verbal statement used to extend help to P/C/S in order to complete a work-related task (e.g., "Let me help you put cheese on the pizzas."), or social-related situation ("Let me help buy the cake."), or a self-initiated, spontaneous, non-verbal behavior described in the narrative as "helping," (e.g., P goes over to help slice the cheese). This purpose should be scored if behavior (assistance) elicits a "thanks;" otherwise assume it is part of the task unless the narrative indicates differently.

To Be Polite--Use Social Amenities (A)--To use words commonly associated with politeness or manners (e.g., thank you, please, excuse me, pardon me, gesundheit). May be coded as IT if initiated during completion of a task.

To Greet/To Depart (G)--To acknowledge the presence of another by saying such things as "Hi," "Good morning," "How ya doing?," "What's happening?" or to use words commonly associated with departing (e.g., "Bye," "See you tomorrow."). Always code this purpose with an IS or GC <---->.

To Tease or Joke (T)--(a) Any question, comment, response, joke, gesture (e.g., imitation, pointing) or laughter that pokes fun at P/C/S, (b) any question, comment, response, joke, gesture that is described in the narrative as "a joke" or "humorous," or (c) any behavior that elicits laughter from one or more people. Score with an IS or GC <----> categories only.

To Converse/Comment/Share Information (I)--Any verbal statement in past, future, or present tense regarding a task-related or social-related topic. Do not score this: (a) with another *purpose*, and (b) as a re-coded response to a question, that is, as a new initiation. This category should *always* be used with an IT or IS if no other purpose can be determined, and with GC ----> if the topic is known (e.g., P and C discuss the basketball game).

To Get Attention (H)--A word, phrase, gesture, or sound used to attract the attention of another, for example, "Hey." "Hey, Robin;" "Tim;" "You there;" a wave; or a whistle.

Rules for Scoring: Use the code letter within any IS, IT, or GC category in which a purpose can be specified. Multiple purpose statements *can* occur in an interaction (e.g., "Stop yapping and get to work"--C,D). Score as many as are applicable within a *single* interaction by placing the codes within a circle, CD.

Count the total number of *each* purpose code within each type of interaction, e.g., the number of D's within (C)IT ----> P. Record the number in the box corresponding to the direction (C ----> P) *and* type (IT) of interaction. For interactions initiated by P (P ----> __), mark the instance of each purpose with a C or S, depending on the intended respondent (co-worker or supervisor).

Rules for Determining Inter-Rater Agreement

1. If one rater scores a different code, count as 1 disagreement:

	Rater 1	Rater 2
ex.	(C)IT ----> P	(C)IS ----> P
	(C)IT ----> P	NINT

2. Count purpose codes as separate behaviors; thus, if both raters agree on an interaction and purpose, then score 2 agreements.

	Rater 1	Rater 2
ex.	(C)IT ----> P/Q	(C)IT ----> P/Q

If there is a disagreement on the purpose of the interaction, but agreement on the interaction, score 1 agreement and 1 disagreement.

	Rater 1	Rater 2
ex.	(C)IT ----> P/Q	(C)IT ----> P/D

3. Count all responses as separate behaviors--i.e., responses to IT and IS categories and GC categories. However, if one person codes a category that does not require a response, ex. O and one person codes ex. GC C ----> P/O, score as 1 disagreement. If one person scores GC C ----> P/O and another person scores GC C ----> P, count as one error.

4. If someone codes an interaction, or behavior, ex. #T or GC C ----> P/D/+ and other person does not code it at all, count as 1 disagreement. Other examples:

	Rater 1		Rater 2	
If:	GC C <----> P/Q +	and	GC C <----> P	= 2 errors
If:	GC C <----> P/Q +	and	GC C <----> P/DO	= 2 errors
If:	GC C <----> P/Q +	and	GC C <----> P/Q	= 1 error

5. PPC/NPC categories are counted twice (i.e., there is an opportunity for 2 agreements/disagreements). PPC/NPC's counted as one behavior; the direction of the interaction and/or the participants is the other behavior.

Participant: ____________

Condition: ____________

Employer: ____________

TALLY SHEET A

S
O
C
I
A
L

# MIN	[illegible]	(P)IS→S	R(S)	(P)IS→C	R(C)	(S)IS→P	R(P)	(C)IS→P	R(P)	NINT	PPC	NPC	BB
	1												
	2												
	3												
	4												
	5												
			+ o		+ o		+ o		+ o		□→P P→□	□→P P→□	

[illegible]	GC P→S	R(S)	GC P→C	R(C)	GC S→P	R(P)	GC C→P	R(P)	GC S↔P	GC C↔P
1										
2										
3										
4										
5										
		+ o		+ o		+ o		+ o		

A

SURPLUS DATA	
[illegible] #	CODE

TOPICS ____________

COMMENTS ____________

Condition: ______________ Participant: __________ TALLY SHEET B

W O R K

Session	(P) IT → S	TR (S)	(P) IT → C	TR (C)	(S) IT → P	TR (P)	(C) IT → P	TR (P)	# Tasks	SIMST
1										
2										
3										
4										
5										
		+ o		+ o		+ o		+ o		

P U R P O S E

Codes	P → C			Codes	S → P			Codes	C → P			Codes	GC S↔P	Codes	GC C↔P
	IS	IT	GC		IS	IT	GC		IS	IT	GC				
D				D				D				D		D	
Q				Q				Q				Q		Q	
C				C				C				C		C	
P				P				P				P		P	
O				O				O				O		O	
R				R				R				R		R	
A				A				A				A		A	
G				G				G				G		G	
T				T				T				T		T	
I				I				I				I		I	
H				H				H				H		H	

B

SURPLUS DATA

Session #	CODE

OBSERVER: JANIS CHADSEY-RUSCH
EMPLOYER: PRINT SHOP
DATE: 6/3/86
TYPE OF OBSERVATION: WORK 1
START TIME: 9:05 A.M.
STOP TIME: 9:15 A.M.
PARTICIPANT: # 16
CONTEXT: PARTICIPANT AT WORK TABLE. TIM IS AT PAPER CUTTER. # 15 AT GLUE BINDING MACHINE.

OBSERVATIONS:

(P)IT → C/Q ⊕
P ASKS TIM A WORK QUESTION/ TIM RESPONDS/ TIM AND
6C C ↔ P/I (P)IS → C/I
P CONTINUE TO TALK ABOUT WORK/ P SAYS HE IS HUNGRY
⊕
AND TIM SAYS HE WAS THINKING THE SAME THING/ P IS
#T (P)IT → C/I ⊕
READING AN ORDER AND COMMENTS ON IT TO TIM/ TIM
(C)IT → P/Q,D ⊕
ASKS IF IT HAS BEEN NUMBERED THEN SAYS "GO AND DO
6C C ↔ P/I
IT I GUESS"/ TIM AND P DISCUSS WHAT TO DO ABOUT
(P)IT → C/Q
THE ORDER/ P SAYS HOPES THEY HAVE ENOUGH BOXES/
⊕
TIM SAYS "HELL, THEY CARRIED ENOUGH OVER"/ TIM SAYS
6C C → P/O #T
SOMETHING DOESN'T MATTER/ P AND TIM PUSH CARTS
6C P → S/Q
AROUND/ P ASKS S A QUESTION WHEN HE COMES IN FROM
⊕
WAREHOUSE/ S ANSWERS/ S LEAVES AND P WALKS BACK
TO STOREROOM AREA AND IS OUT OF SIGHT/ P COMES
6C P → C ⊕
BACK IN AND TALKS TO FEMALE CO WHO HAS WALKED INTO
WORK ROOM/ THEY BOTH WALK OUT OF WORK ROOM
(P)IT → C/O #T
TOGETHER/ P GOES TO HELP TIM UNLOAD HEAVY BOXES
IN OTHER AREA OF BUSINESS/ STOP/

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